Contents

easy = ☺
hard = ☹
takes time = 🕒
double code = ✳

Topic and puzzle numbers	Answer	'7 plus' theory page
NEGATIVE NUMBERS		
☺ **30** Ascending order	Rhinoceros, Horse	46
31 Addition	Stranger, Proud Chief, Princess	47
🕓 ☺ **32** Number plane	Kiwi — bird	48
TIME		
☺ **33** Reading clocks (digital)	Toot and come in (TUTANKHAMUN)	52
34 Converting units	Pull yourself together. How long has this been going on? Since I was a pup	52
35 Mixed operations	The man wears a suit, the dog just pants	54
FRACTIONS AND PERCENTAGE		
☺ **36** Fractions of a whole	A witch hiding in a box	63
37 Fractions of quantities	Someone with the gift of the grab	65
38 Equal fractions	He should attend the sick and leave the well alone	67
39 Simplifying fractions	Herman Melville. He was once captured by cannibals	68
40 Adding fractions (mixed numbers and different denominators)	Ring for a tow truck	74
☹ **41** Subtracting fractions (mixed numbers and different denominators)	But he slipped on a banana skin and came fifth	78
✳ **42** Multiplying fractions	They lie still	80
🕓 ☹ **43** Dividing fractions	Briefcase	83
☹ **44** Mixed operations with fractions	She didn't want to wake the sleeping pills	83
45 Fractions to percentages	EDAM	87
46 Percentage comparisons	He got tired of the hole business	88
47 Percentage of quantities	When it's being toad	90
FLOW CHARTS		
48 Unscrambling instructions	A lost penguin	97
DECIMALS		
☺ **49** Place value	A ping-pong ball bouncing backwards	104
🕓 **50** Decimals to fractions	South America, Australia, Africa	106
51 Addition	He broke his ankle and fell in the sink	107
☺ **52** Subtraction	Roll a centipede onto its back	108
☺ **53** Multiplication (by powers of 10)	It's a load of rubbish	110
54 Multiplication (by multiples of 10)	He was de-lighted	111
55 Multiplication	Hide the shovel	112
✳ ☺ **56** Division (by powers of 10)	Hot, because it's easy to catch cold	113
✳ ☹ **57** Division (by multiples of 10)	Not scrambled eggs again	113
☺ **58** Division (by small whole nos)	Young warrior, Peaceful, Protector, A rose or lily	114
59 Division	Because it comes after U	115
🕓 ☺ **60** Rounding off	MT	117
61 Fractions to decimals	I can't pay attention	117
☺ **62** Decimals to percentages	Someone said, 'Drinks are on the house'	118
63 Percentages to decimals	Because you can't pull its leg	118

	Topic and puzzle numbers	Answer	'7 plus' theory page
	GRAPHS		
☺	**64** Column graphs	Their mother was in the pen doing a long sentence	123
☺	**65** Picture graphs	He got it stuck in the church doors	127
	66 Circle graphs	Sir Pent I. Rhoda Camel	128
☹	**67** Travel graph	They are both in the middle of water	135
	GEOMETRY AND MEASUREMENT		
☺	**68** Measuring lengths	One is hard to get up, the other is hard to get down.	138
	69 Adding lengths	They are all dead	140
☺	**70** Measuring angles	To feed his nightmares	144
☺	**71** Drawing angles	Dove, A twin, Fierce, Lover of horses	149
☺	**72** Types of angles	A house	150
	73 Perimeters (triangles and quadrilaterals)	The national game of Ireland that is a mixture of rugby, hockey and lacrosse	157
	74 Angles in triangles and quadrilaterals	One is heir to the throne and the other is thrown into the air	172
	75 Bearings	Because her class was so bright	174
☺	**76** Area of rectangles	They were easy, but I had trouble with the answers	182
	77 Area of triangles	They can both be fired	186
☺	**78** Solids — faces, edges, vertices	Dr. Jekyll and Mr Hyde, Treasure Island, Kidnapped	188
☺	**79** Volume — counting cubes	A mountain with hiccups	191
	ALGEBRA		
☺	**80** Like terms — addition and subtraction	What's his other eye called?	196
	81 Simplifying expressions	Adam. He was first in the human race	198
☺	**82** Substitution	O.K. I'll have fish and chips please	198
	83 Multiplying and dividing expressions with powers	He is a tiger. One of the many animals which appear in Rudyard Kipling's 'Jungle Book'.	201
☺	**84** Expanding brackets	Babies can't dress themselves	202
	85 Solving equations — one step	Matchbox	205
	CALCULATORS		
	86 Adding decimals	In caves, for this is another name for caving, coming from the old English name 'Spelunk' meaning cave	207
✳	**87** Mixed operations	It was nice gnawing you	213
	88 Percentage of quantities	Monah Lott, Claude Bottom, Henrietta Man	214
☹	**89** Mixed operations	Your brains could fall out	215
	SETS		
☺	**90** Equal sets	Chronometer	219
	91 Complement	Pass a scream test	221
	92 Venn diagrams	How about a date	222
	93 Union and intersection	A narrow sparrow A soggie doggie	223

	Topic and puzzle numbers	Answer	'8 plus' theory page
	NUMBER SKILLS		
☺	**94** Addition of quantities	They never have that sinking feeling	2
☺	**95** Subtraction (whole nos)	Koala	2
	96 Multiplication (whole nos)	She watches me like a hawk	2
✳	**97** Division (whole nos)	Seven months old	3
	98 Addition and subtraction of fractions	Spaghetti served by a neat waiter	6
☹	**99** Multiplication and division of fractions	I'm not sure but I know it was a cutting remark	6
✳	**100** Addition and subtraction of decimal quantities	If you're not better in a day or two give me a ring.	8
	101 Multiplication and division of decimals	Hang on sir, I'll call the branch manager	9
	102 Decimals to fractions	No, stick it on the envelope	9
	103 Rounding off	Some day my prints will come	16
	GRAPHS		
☺	**104** Line graphs	A bartender	23
☺	**105** Conversion graphs	That's the way the cookie crumbles	26
	106 Travel graphs	Mouldie Locks	37
🕓	**107** Histogram from a frequency table	A vicious circle	43
	NEGATIVE NUMBERS		
☺	**108** Number line positions	You can tune a piano but you can't tuna fish	46
✳	**109** Addition	The sign said 'Place litter here'	50
🕓	**110** Subtraction	Desk lamp	51
☺	**111** Number plane positions	Major Blink, Mustapha Nutherlook, Hisssstory, His ape b c's	54
🕓	**112** Number plane picture	Chip-munk	55
	113 Multiplication	He sat in front of the fire and melted	59
☺	**114** Division	Captain Cook	61
	115 BODMAS	Father cat, mother cat and two kittens	61
	ALGEBRA		
✳☺	**116** Simplifying like terms	A pair of nickers	67
	117 Expanding brackets	The clown snorkeling	68
	118 Expanding brackets involving negatives	Because they lost all their matches	71
☺	**119** Multiplication in index form	Come and see the rain dear	74
	120 Division in index form	He wanted to get to the other tide	76
☺	**121** Zero Index Law	A chicken Barber queue!	79
	122 Power raised to a power	Horse stuck in a stable door	80
☹	**123** Expanding brackets with powers	Police are looking into it	85
	124 Substitution	A kettle	86
	125 Multiplication and division of algebraic fractions	A tired kangaroo	90
✳☹	**126** Addition and subtraction of algebraic fractions	It stole the show	94
☺	**127** Solving equations (one step)	Sandy claws	97
	128 Solving equations (two step)	He made a trunk call and reversed the charge	99
	129 Solving equations (> two steps)	A dead elephant	101
☹	**130** Solving equations (repeated) pronumeral	A squawchestra!	103

	Topic and puzzle numbers	Answer	'8 plus' theory page
	ALGEBRA (cont)		
	131 Graphing equations	They didn't want to work on wickends!	107
	132 Solving Inequations	The downfall of Turkey, the loss of Greece and the destruction of China	111
	GEOMETRY		
	133 Measuring angles	Two birds fighting over a worm	114
☺	**134** Vertically opposite and corresponding angles	Pants with a rip in them	120
☺	**135** Alternate and allied angles	You'll just have to be a little patient	123
	136 Constructing special angles	Howard I. Knoe, Betty Wont, I. Klipitoff	131
☺	**137** Types of triangles	Rubbish bin	135
	138 Exterior angle of a triangle	No, they only have transistors	138
	139 Angles in quadrilaterals	A person who isn't mad	140
✳	**140** Dividing in a given ratio	It was using fowl language	145
☺	**141** Scale drawing – lengths	A Maybe	148
🕒	**142** Enlargement	A handle	151
☺	**143** Bearings	Because they don't know how to knit	152
	PERCENTAGE		
✳☺	**144** Per cent to decimal	To get away from the nuts on the ground	162
☺	**145** Decimal to per cent	I can't see him right now	165
🕒	**146** Percentages of quantities	Fish	168
	147 Finding whole quantities	She didn't marry the best man	170
	148 Profit and loss	Because they are so difficult to iron	172
	RIGHT ANGLED TRIANGLES		
☺	**149** Pythagoras' rule (finding hypotenuse lengths)	In a frightful mess	188
	150 Perimeters of triangles	It doesn't eat	191
	MEASUREMENT		
✳☺	**151** Changing length units	He wanted to grow mashed potatoes	197
	152 Adding lengths in different units	Old mother Hubbard, Jack 'N' Jill, Little Jack Horner	198
✳☺	**153** Multiples of weights	On a giant's fingers	201
	154 Mixed operations with time	Because there were so many knights then	204
	155 Time differences	To steal from the writings of another	207
☺	**156** Temperature differences	Tissue box	209
	157 Speed	Don't give a house warming party today	213
☹	**158** Perimeters of figures	Which way did you come in?	219
☺	**159** Areas of rectangles	Because they had just had a march of 31 days	222
	160 Areas of triangles, parallelograms and trapeziums	The Straits of Gibraltar are fourteen km across	226
	161 Area of circles	It was General Electric	228
☹	**162** Surface areas of solids	It's good for toasting	234
☺	**163** Changing area units	From chasing parked cars	236
☺	**164** Volume of cuboids	The second highest mountain peak in Mexico	240
☺	**165** Changing volume units	This is the last straw	246

Topic and puzzle numbers	Answer	'8 plus' theory page
ADVANCED ALGEBRA		
166 Changing the subject of a formula	Porcupine hiding behind a beach ball at sunset	249
167 Solving simultaneous equations (substitution method)	A worm going downstairs	253
168 Solving simultaneous equations (elimination method)	One was found not guilty and the rest got three months	254
PROBABILITY		
169 Probability of events	He couldn't make a ewe turn	267
170 Expected outcomes	A banana skin on the footpath	269

NOTES TO THE TEACHER

The puzzle worksheets of **Sum Fun** have been carefully designed to give students, in their middle school years, practice at specific mathematical skills and at the same time add to their enjoyment of learning. Much effort has gone into making the puzzles as meaningful as possible so that students

(i) can relate the use of mathematics to society in everyday life, technology, employment and other subjects studied;

(ii) gain practice in problem-solving and following written instructions.

The puzzles have been prepared to supplement the material presented in the textbooks **7-plus** and **8-plus** by Schnabl, Schnabl and Wagstaff. The puzzles may be reproduced for use by students in the classroom.

To assist the teacher in selecting the appropriate puzzle for the class (or student), an elaborate CONTENTS section has been devised. Puzzles have been grouped into topics as they occur in **7-plus** and **8-plus**, and the following information is given with each;

(a) the skill or technique involved;

(b) the difficulty of the puzzle (easy ☺, hard ☹), and the clock symbol 🕓 to indicate those that take a long time to complete;

(c) the puzzle answer;

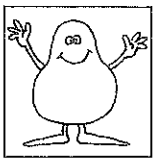
(d) the page number from either **7 plus** or **8 plus** where the theory for the puzzle was explained.

The CONTENTS section also uses an asterisk ✳ to indicate there are fourteen puzzles which have 'double codes'. These have been designed to stop students guessing the answers after having answered only a few questions. Typically, the answer to one of these puzzles tells the student to go to the next letter in the alphabet for the remaining letters. For example,

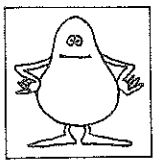
FNNC would become GOOD

after moving forward one letter in the alphabet.

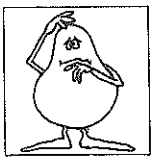
Each puzzle also has an indicator of its difficulty on the puzzle page. The expression on the face of the peanut-man character incorporating the puzzle number indicates the degree of difficulty of the questions.



EASY
(65 puzzles)



AVERAGE
(93 puzzles)



HARD
(12 puzzles)

Those puzzles that will take a long time to complete will have the clock symbol at the top of the page.

TAKES TIME
(14 puzzles)

The directions on each puzzle have been made as simple and as short as possible to help students get started as quickly as possible. Teachers will still need to know what is required for each puzzle as some students may need the task explained.

Most puzzles have ample space provided for any calculations required and students will not need to work in their note books very often.

Many of the puzzles result in pictures which when coloured and displayed can form an interesting feature wall in any classroom.

HAVE SUM FUN! — Don Wagstaff

ACKNOWLEDGEMENTS

My special thanks to my wife, Kerryn, for her encouragement and support; to Linda and Gerhard Schnabl for their contribution of ideas and time in proofreading; and to Tim, Peter, David, Shelley, Pearl, Lila and Bert for puzzle ideas and jokes.

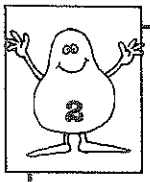
Don Wagstaff

How did the intruder get into the house?

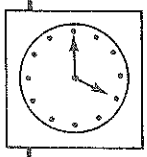
Place the numbers in each group below in **ascending** order. The fourth number in each order will be the value of the letter with each group. This gives the puzzle answer code.

R	27 31 19 48 24 39	9 6 2 7 8 11 3	**E**
O	19 82 75 53 27 59	42 47 39 46 43	**D**
W	77 53 68 21 48 34	9 5 3 4 2 1	**I**
U	87 73 95 82 77 62 91	83 75 93 64 21 7 80	**N**
N	10 7 34 15 27 8	106 82 17 118 34 96	**I**
D	44 83 117 65 51 3 110	4 27 15 6 19 33 24	**T**
R	19 81 27 93 54 22 25	7 4 15 19 27 18 31	**W**

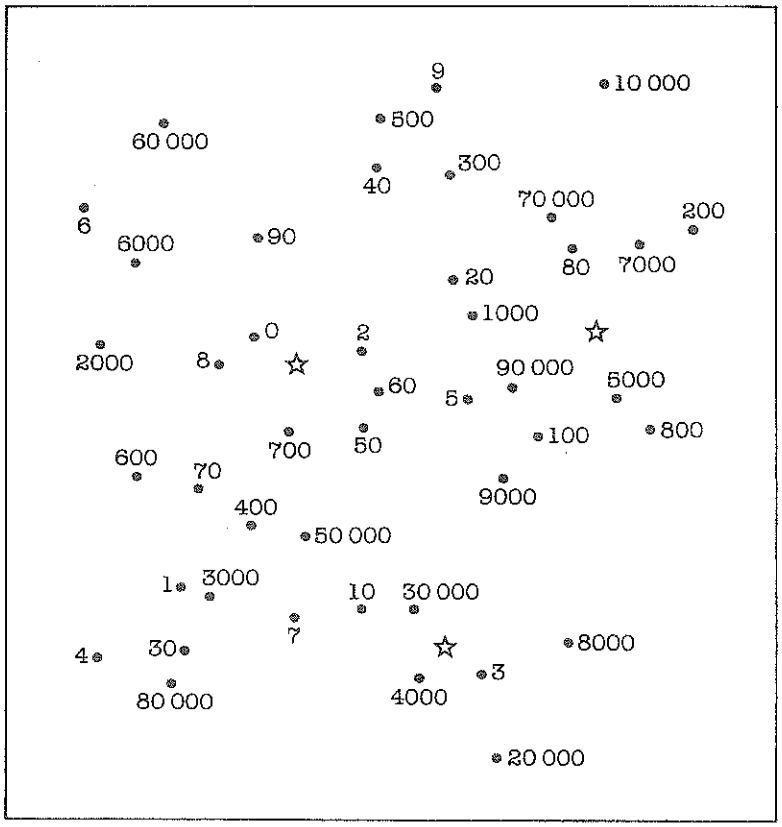
4	15	19	31	82	46	7	27
53	96	75	65	59	18		



Smiley



STATE THE VALUE OF EACH OF THE ARROWED DIGITS. JOIN THE ANSWERS IN THE ORDER THEY APPEAR.



JOIN
- 231
- 54
- 7634
- 970
- 2011
- 83 593

STOP

JOIN
- 87
- 96 032
- 5139
- 45 640
- 7234
- 92 083

STOP

JOIN
- 7421
- 852 427
- 47
- 4713

STOP

JOIN
- 24 716
- 36 208

STOP

VERY LARGE DOT AT
- 7896

COLOUR IN REGIONS THAT HAVE A STAR ☆ INSIDE

JOIN
- 274 651
- 2545
- 69 253
- 3807
- 18 240
- 12 654
- 629
- 77 506
- 160 315
- 96
- 52 874
- 3721
- 186 027
- 4203
- 327 511

CONTINUE

CONTINUE
- 18 264
- 230 406
- 7250
- 825

STOP

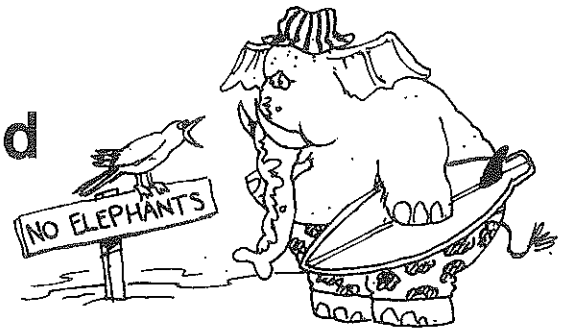
JOIN
- 26 514
- 208
- 360
- 31 253
- 27
- 657 392
- 63 020
- 76 284

STOP

LARGE DOTS AT
- 2316

AND
- 647

Why weren't the elephants allowed on the beach?

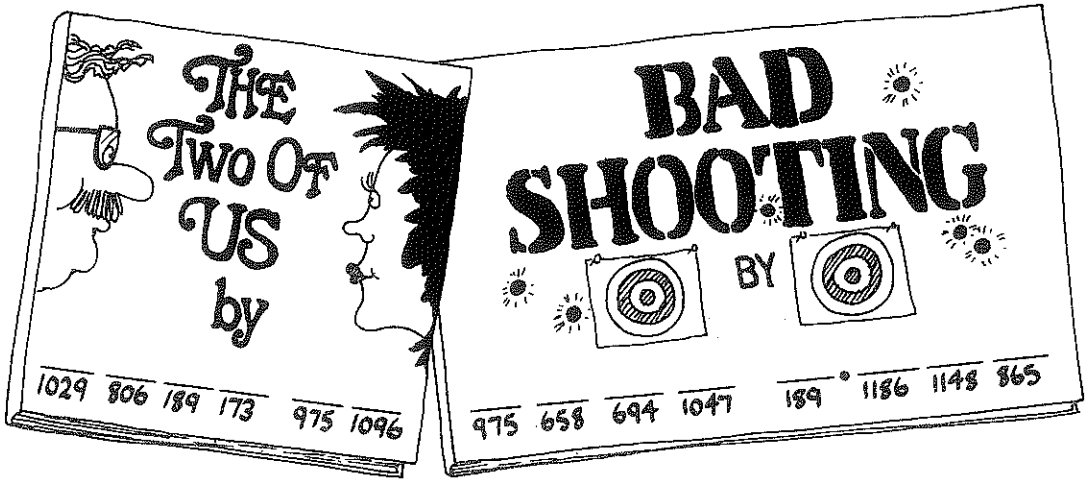


Answer the (28) questions. The letter beside each question and its answer gives the puzzle code.

26 + 12 = ____ **K**	53 + 32 = ____ **Y**	9 + 34 = ____ **E**	60 + 23 + 15 = ____ **D**
5 + 8 + 7 + 2 = ____ = **T**	53 + 4 + 9 = ____ = **R**	4 + 2 + 8 + 9 = ____ = **I**	5 + 15 + 10 = ____ = **C**
14 + 37 = ____ **U**	69 + 18 = ____ **R**	47 + 47 = ____ **P**	23 + 68 = ____ **H**
18 + 9 + 23 = ____ **T**	58 + 13 + 12 = ____ **P**	8 + 17 + 56 = ____ **H**	22 + 33 + 44 = ____ **L**
30 + 47 + 12 = ____ **E**	36 + 25 + 18 = ____ **N**	17 + 28 + 32 = ____ **E**	35 + 7 + 21 = ____ **O**
The sum of 47 and 33 = ____ = **N**	The total of 3, 8 and 15 = ____ = **T**	32 plus 58 = ____ = **T**	16 and 32 added = ____ = **S**
15 + 22 + 8 + 33 + 14 = ____ **E**	13 + 21 + 17 + 5 + 28 = ____ **K**	4 + 9 + 27 + 8 + 14 + 3 = ____ **U**	The sum of 8, 5, 12, 7, 6, 3, 2, 11 and 15 = ____ = **U**

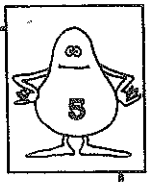
90	91	77	85	30	63	51	99	98	79	50	84	43	89	83
22	81	92	23	87	26	66	69	80	38	48	65	94		

Who wrote these books?



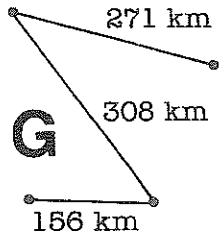
n 54 + 37 + 82 = ____	259 + 307 + 128 = ____ **s**	**t** 63 + 257 + 545 = ____
30 + 72 + 68 + 19 = ____ **a**	504 + 263 + 419 = ____ **l**	33 + 154 + 817 + 92 = ____ **e**
i 23 + 234 + 345 + 56 = ____	**e** 357 + 68 + 1 + 24 + 579 = ____	**s** 670 + 128 + 249 = ____
128 + 75 + 296 + 307 = ____ **w**	**o** 318 + 472 + 102 + 256 = ____	**m** 254 + 217 + 238 + 266 = ____

The teachers are rough at our school!

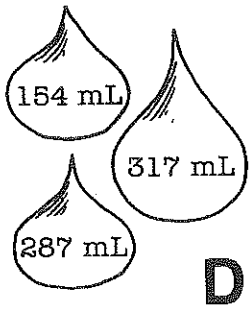


Add up the quantities in each rectangle below. The total and the letter in each gives the puzzle code.

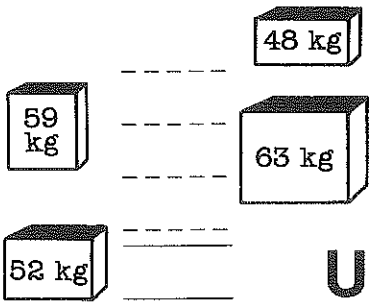
G



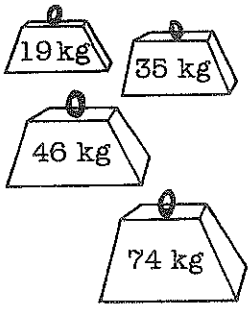
D



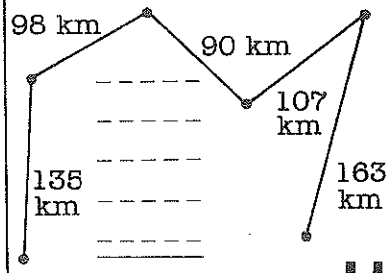
U



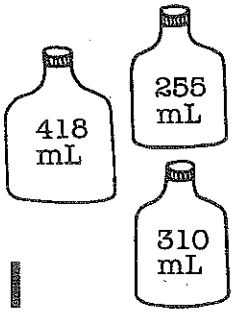
O



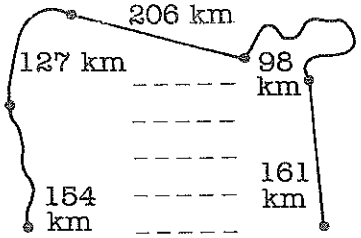
H



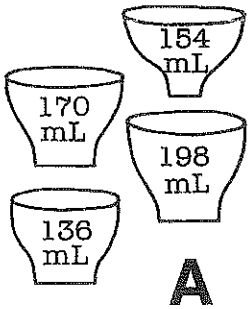
I



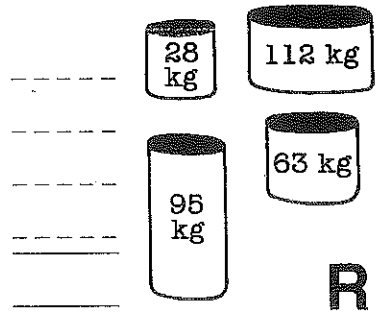
M



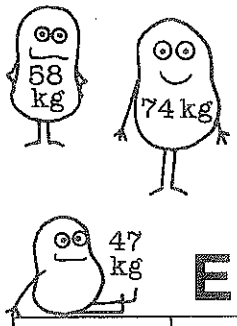
A



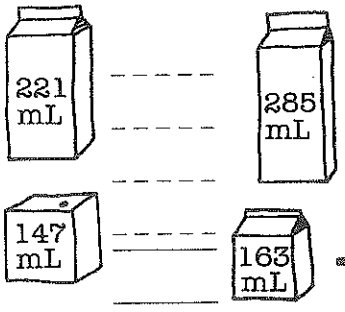
R



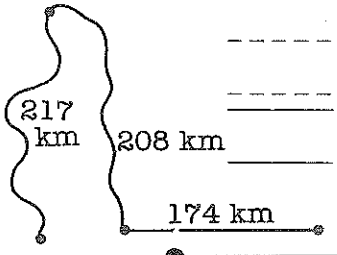
E



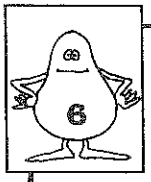
T



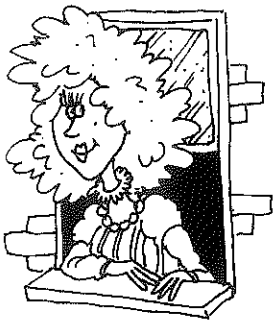
S



816 mL	593 km	179 kg	**Y**	758 mL	174 kg	**N**	816 mL				
735 km	983 mL	**V**	179 kg	746 km	658 mL	298 kg	**K**	599 km			
J	222 kg	599 km	816 mL	**B**	298 kg	222 kg	983 mL	599 km	179 kg	599 km	



How can you tell Ellen she is pretty in just eight letters?



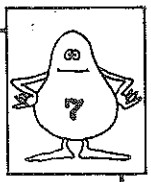
ANSWER THE QUESTIONS TO DISCOVER THE PUZZLE CODE

The difference between 975 and 241 _____ _____ _____ D	869 − 523 _____ T	427 − 205 _____ Q
	553 − 82 _____ S	2396 − 1572 _____ O
571 − 286 E _____	907 − 298 T _____	5316 − 4869 A _____
1050 − 907 _____ A	300 − 186 _____ M	600 − 335 = _____ T
4601 − 3732 _____ R	546 minus 174 _____ L	3007 − 2058 _____ A
394 less 176 _____ K	9058 − 8767 _____ Z	6666 − 5777 _____ D
2222 − 1444 _____ T	The difference between six hundred and fifty, and two hundred and ninety-three _____ E _____	4096 − 3528 _____ T

143	889	734	949	372	285	568	346	357	869	609	824
265		222		291		447		778		471		218		114	

How's business?

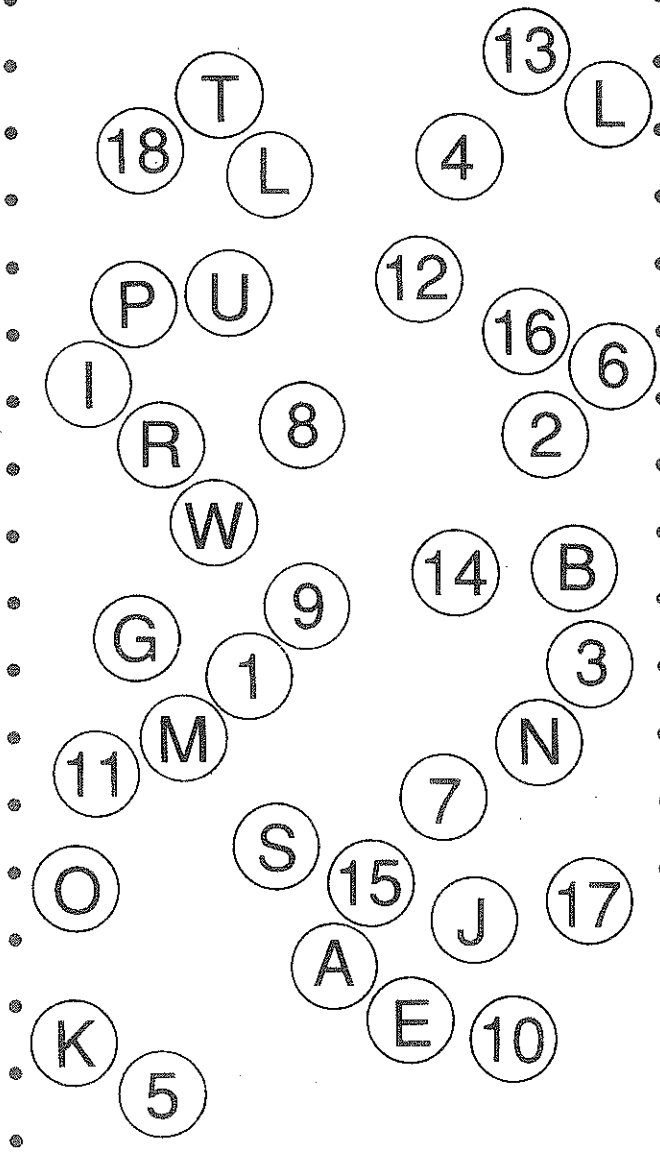
Draw a line between each question and its answer. The letter and number on each line give the code.



1	2	3	4	3	5	6	3	5	6

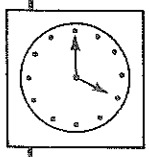
7	8	9	5	8	3	10	11	11	6	12	8	4	5

20 − 5 − 3 − 7 =	4
52 − 10 − (20 − 5) =	30
35 − 6 − 3 − 7 − 4 =	21
100 − 65 − 8 − 3 =	27
10 − (30 − 24) =	17
(81 − 11) − 49 − 1 =	9
25 − 3 − 4 − 5 − 6 =	19
70 − 20 − 30 − 10 =	24
49 − 7 − 12 − 5 − 4 =	20
33 − 9 − 6 − (10 − 1) =	45
(15 − 2) − (20 − 18) − 3 =	5
41 − (30 − 26) − 20 =	35
75 − 6 − 7 − 3 − 8 =	10
53 − (30 − 15) − 8 =	8
40 − 2 − 4 − 7 − 8 =	13
95 − 15 − 10 − 25 =	15
55 − 7 − 4 − 6 − 3 =	51
28 − (17 − 5) − 3 =	7



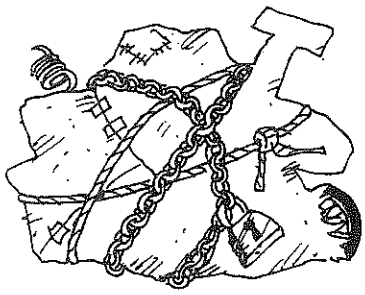
8	4	3	13	14	14	15	8	9	16	2	17

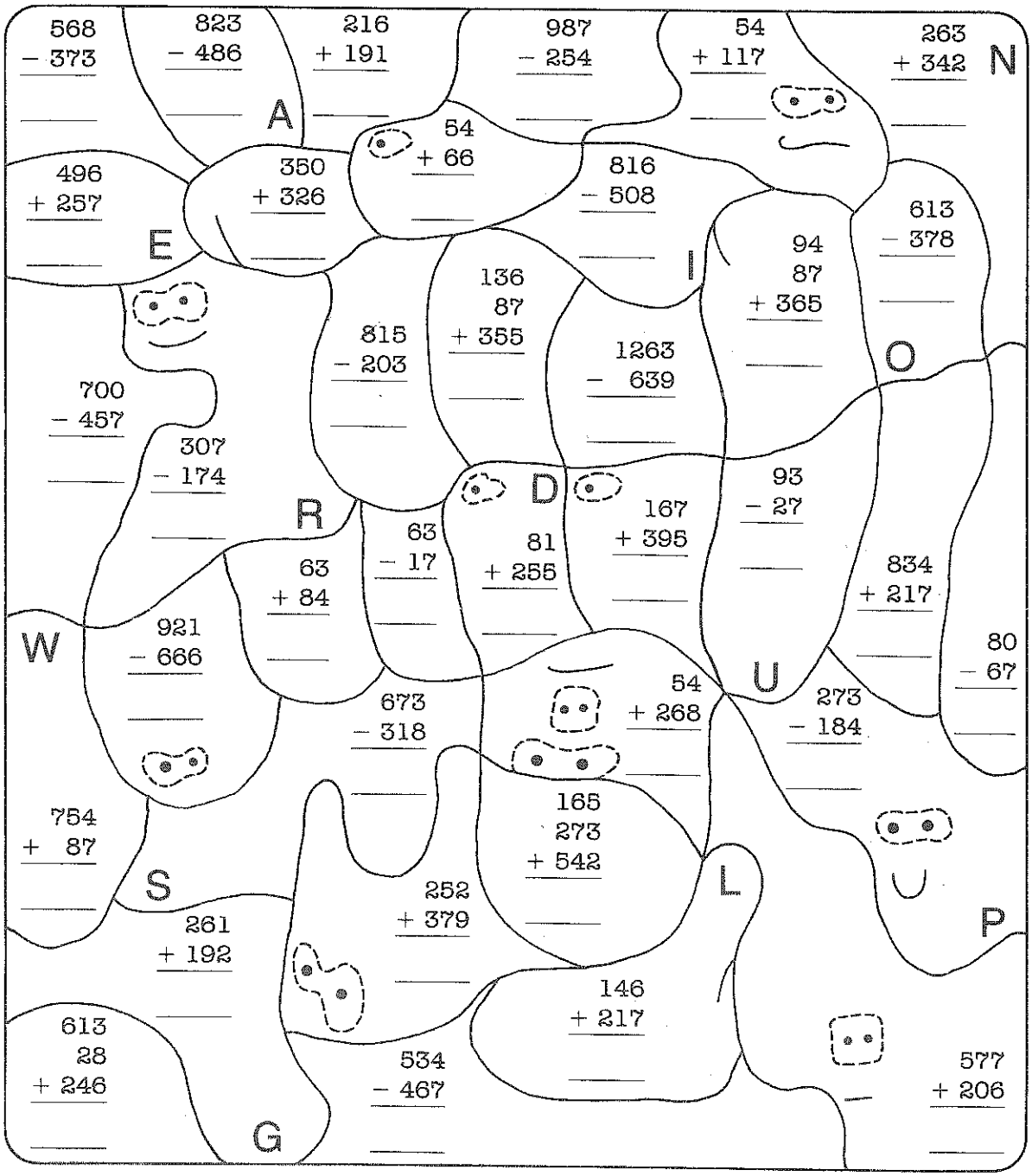
8	4	3	11	14	14	15	8	9	16	18	5	4	4	5	12



Mystery object!

ANSWER ALL THE QUESTIONS IN THE REGIONS BELOW. SHADE IN ALL REGIONS WITH ODD NUMBER ANSWERS. LETTERS HAVE THE VALUE OF THE ANSWER IN ITS REGION.

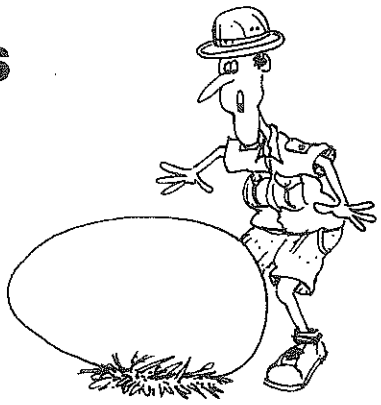




453	235	133	308	363	363	337

66	89	355	308	336	753	336	235	841	605

The only two mammals that lay eggs...



Answer the questions below. Find the answers in the boxes at the bottom of the page and colour those boxes. The remaining letters will spell out the names.

\$738 less \$549

823 kg
− 296 kg
_____

1275 m less 894 m

580 kg take away 165 kg

How much bigger than \$87 is \$423?

How much lighter is 725 kg than 983 kg?

The difference between 52 m and 420 m

1043 kg less 868 kg

The difference between \$150 and \$342

\$254 below \$618

375 m below 708 m

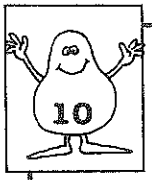
975 m minus 492 m

209 m under 716 m

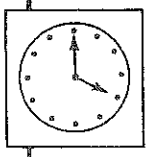
The difference between 254 kg and 816 kg

\$5603
− \$4975
_____

S 258 kg	P \$271	I 333 m	L 184 kg	L \$192	A 292 m	C 175 kg	T \$573	B 368 m	Y 273 kg
E \$336	P \$346	L \$189	U 354 m	G 415 kg	S 554 kg	O 483 m	B 527 kg	E 424 kg	A \$364
C 427 m	H 350 kg	W 381 m	I \$409	D 562 m	E \$628	N 115 m	E 562 kg	A \$668	T 507 m

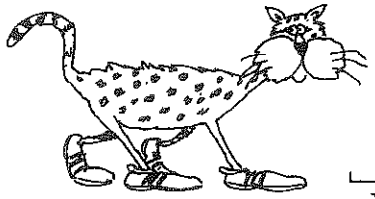


Interesting facts



To decode the messages, replace each number with the letter at that position on this number line.

E	S	W	H	B	X	M	D	R	O	T	A	N	I	G	V	K	P	C	Y	Q	L	U	F	Z	J
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25



THE CHEETAH

13 1 10 3 0 23 11 1 10 0 1 10

11 12 13 6 11 21 13 12 10 3 0 2 9 8 21 7

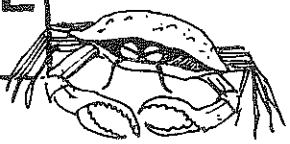
13 10 18 11 12 8 22 12 11 10 1 17 0 0 7 1

22 17 10 9 9 12 0 3 22 12 7 8 0 7

11 12 7 10 0 12 16 13 21 9 6 0 10 8 0 1

17 0 8 3 9 22 8

THE JAPANESE SPIDER CRAB



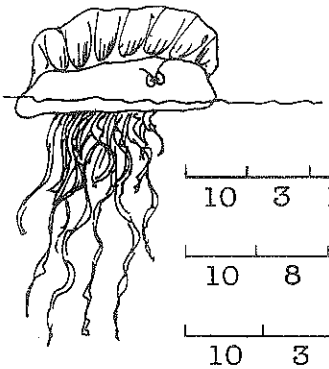
13 1 10 3 0 21 11 8 14 0 1 10

9 23 11 21 21 18 8 11 4 1 2 13 10 3 11

1 17 11 12 9 23 10 3 8 0 0 6 0 10 8 0 1

23 8 9 6 18 21 11 2 10 13 17 10 9

18 21 11 2 10 13 17



THE PORTUGUESE MAN-OF-WAR

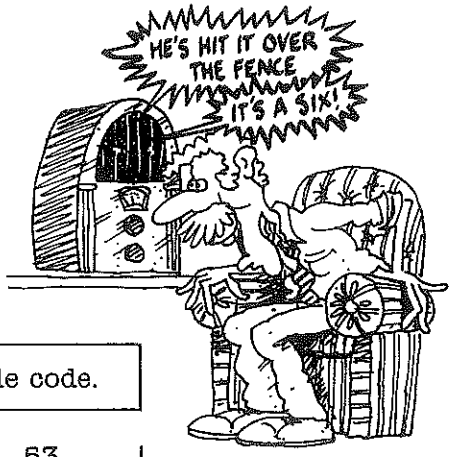
10 3 13 1 25 0 21 21 19 23 13 1 3 3 11 1

10 8 11 13 21 13 12 14 1 10 13 12 14 1

10 3 11 10 18 11 12 4 0 22 17 10 9

23 13 23 10 19 6 0 10 8 0 1 21 9 12 14

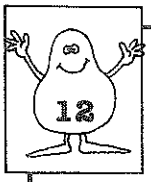
Did you hear about the man listening to a match?

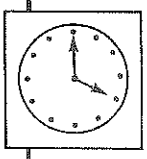


Answer the questions to discover the puzzle code.

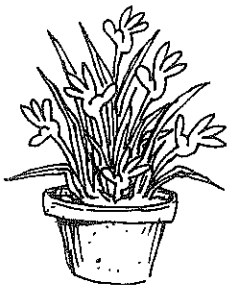
32×41 = ____ u	53×72 = ____ h	60×54 = ____ e
89×27 = ____ i	53×91 = ____ a	77×83 = ____ t
95×48 = ____ b	26×37 = ____ h	34×79 = ____ r
66×99 = ____ e	99×15 = ____ r	29×83 = ____ s
	87×60 = ____ n	

962	3240	4560	1312	2686	5220	6391	3816	2403	2407	6534	4823	1485

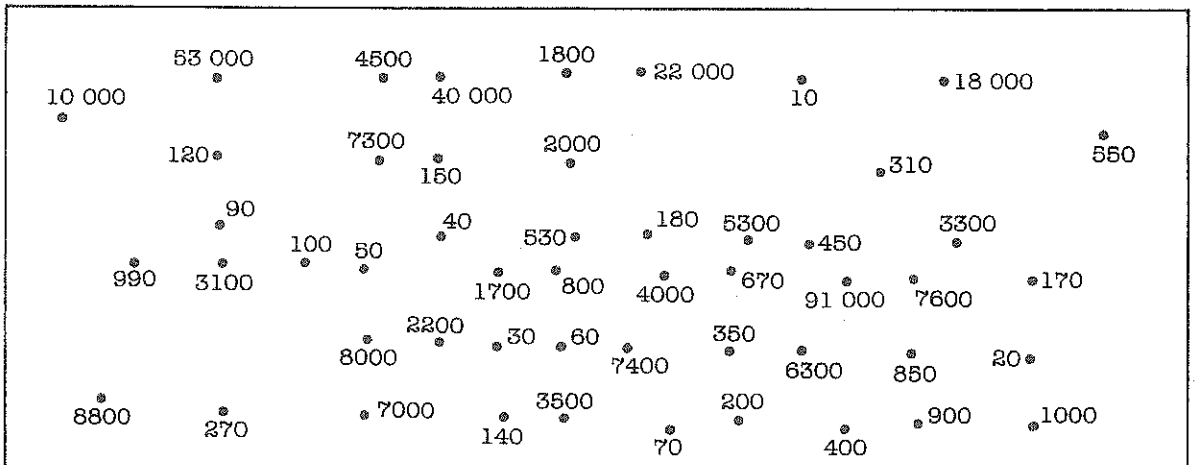




What plant do fingers and thumbs grow on?



Answer the questions below and find the dot next to each answer. Join the dots in the order the answers occur in each block of questions.



7 × 10 =	
35 × 100 =	
80 × 10 =	
4 × 1000 =	

20 × 100 =	
15 × 10 =	

8 × 1000 =	
3 × 10 =	
17 × 100 =	
5 × 10 =	
700 × 10 =	

63 × 100 =	
35 × 10 =	

22 × 1000 =	
18 × 10 =	
53 × 100 =	

10 × 27 =	
100 × 31 =	

10 × 40 =	
2 × 100 =	
67 × 10 =	
1000 × 91 =	

9 × 100 =	
10 × 100 =	
10 × 2 =	
85 × 10 =	
100 × 76 =	
17 × 10 =	

53 × 10 =	
18 × 100 =	
40 × 1000 =	
10 × 4 =	

12 × 10 =	
73 × 100 =	
10 × 450 =	
1000 × 53 =	
10 × 9 =	

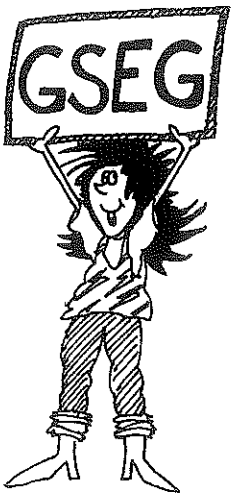
99 × 10 =	
10 × 10 =	

74 × 100 =	
6 × 10 =	

14 × 10 =	
100 × 22 =	

33 × 100 =	
1000 × 18 =	
31 × 10 =	
1 × 10 =	
10 × 45 =	

Scrambled well-known sayings



Answer the questions below to discover the puzzle code.

4000	24 030	4050	4200	6300	320
2040	4690	5000	4690	7520	7520	4000

16 × 20
= _____ × 10
= _____ **b**

34 × 300
= _____ × 100
= _____ **n**

94 × 80
= _____ × 10
= _____ **g**

7 × 600
= _____ × 100
= **a**

81 × 50
= _____ × 10
= _____ **r**

19 × 90
= **t**

55 × 200
= **o**

25 × 200
= **d**

101 × 2000
= **i**

90 × 70
= **m**

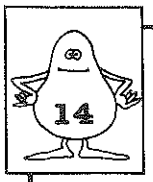
67 × 70
= **e**

801 × 30
= **c**

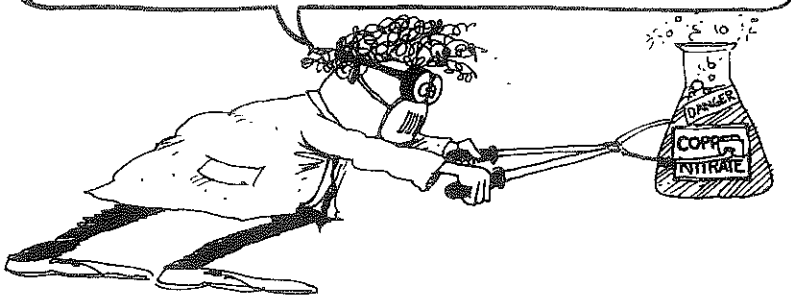
8 × 500
= **s**

34 × 60
= **l**

4000	4690	4200	4000	11 000	10 200	4000
7520	4050	4690	4690	1710	202 000	10 200	7520	4000



What is copper nitrate?

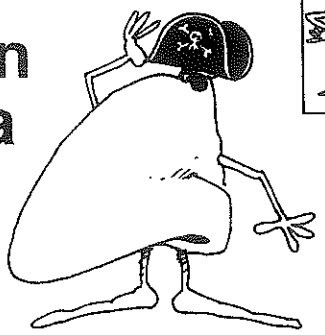


Calculate the products below. Exchange the answer for the letter beside each question to find the puzzle answer.

f	134 × 205	**e**	514 × 123	**l**	926 × 327	**t**	540 × 610
n	323 × 676	**i**	518 × 987	**o**	600 × 129	**p**	908 × 715
v	777 × 565	**c**	319 × 927	**m**	803 × 102	**r**	108 × 907

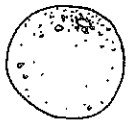
77 400	439 005	63 222	97 956	329 400	511 266	81 906
63 222	27 470	77 400	97 956	649 220	77 400	302 802
511 266	295 713	63 222	81 906	63 222	218 348	

What is it that by losing an eye, has nothing left but a nose?

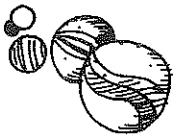


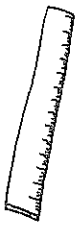
Solve the problems and cross out the rectangles with the answers in the puzzle solution at the bottom of the page. The letters remaining will spell out the answer to the puzzle.

How much will 15 oranges cost if they are 18 cents each?



What will the total weight of 28 marbles be if they each weigh 23 g?

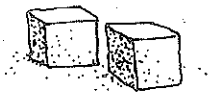




How long will 80 rulers be if they are placed end to end (each ruler is 32 cm long)?

Pencils cost 13 cents each. How much will 37 pencils cost?

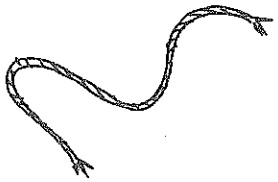
57 sugar cubes weigh 12 g each. What is their total weight?



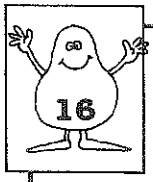
Chairs are 46 cm wide. If 52 such chairs are placed side by side, how long will the row be?

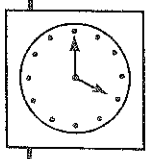
Sally receives 45 cents pocket money per day. How much will she get in a fortnight?

What length of rope is needed if we wish to cut it into 45 pieces each 62 cm long?

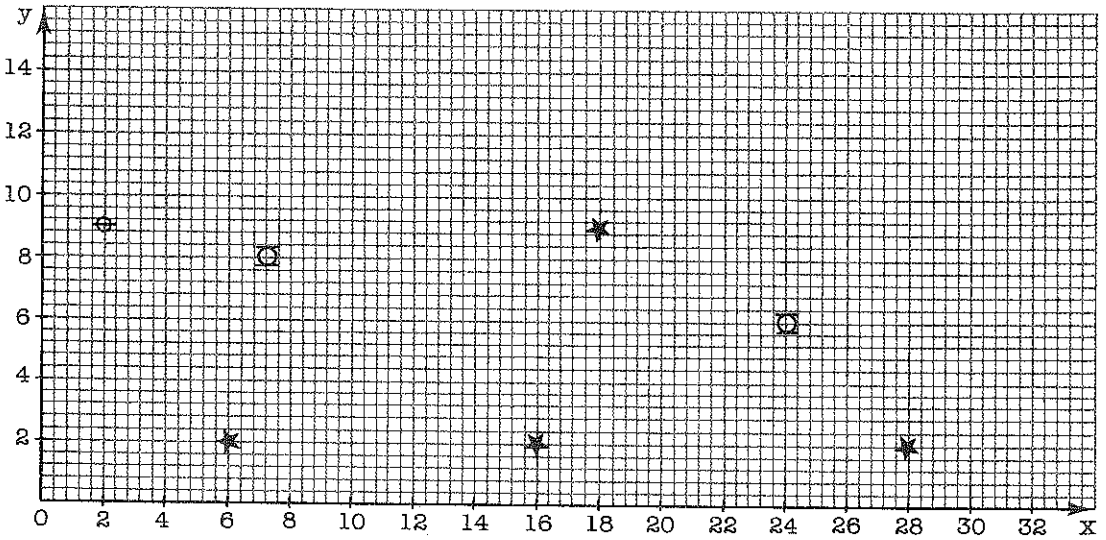


T 630¢	H 644 g	I 2790 cm	S 481¢	N 730 g	O 684¢	T 2392 cm
E 270¢	I 581 g	S 2970 cm	N 684 g	E 564¢	W 2560 cm	





I'm big and fast. Find me



Plot the points and join them in the order indicated in each rectangle.

(4, 12) → (4, 6) → (0, 6) → (0, 12) → (10, 12) → (10, 3) → (14, 3) → (15, 4) → (17, 4) → (18, 3) → (18, 1) → (17, 0) → (15, 0) → (14, 1) → (14, 3).

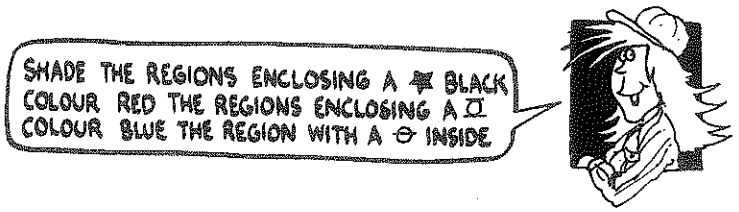
(14, 9) → (20, 12) → (20, 10) → (30, 10) → (30, 8) → (20, 8) → (20, 6) → (14, 9).

(4, 2) → (4, 3) → (5, 4) → (7, 4) → (8, 3) → (8, 2) → (14, 2).

(26, 1) → (26, 3) → (27, 4) → (32, 4) → (32, 14) → (22, 14) → (18, 14).

(0, 6) → (0, 2) → (4, 2) → (4, 1) → (5, 0) → (7, 0) → (8, 1) → (8, 2).

(26, 1) → (27, 0) → (29, 0) → (30, 1) → (30, 3) → (29, 4) → (12, 4) → (12, 14) → (18, 14).



(24, 11) → (24, 13) → (25, 13) → (25, 12) → (24, 12) → (25, 11).

(21, 13) → (22, 13).

(29, 11) → (28, 11) → (28, 13) → (29, 13).

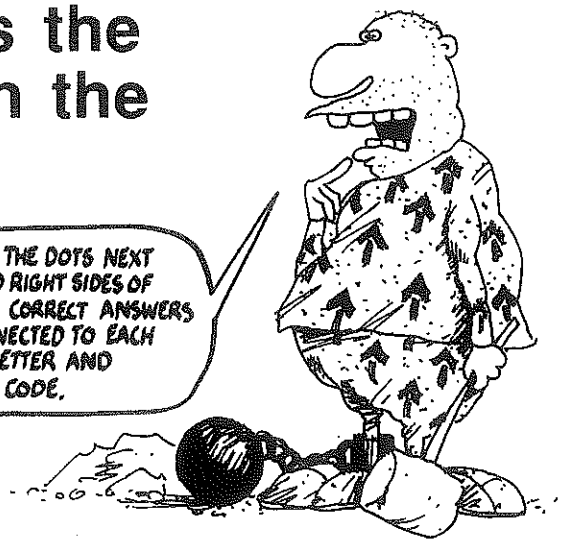
(27, 13) → (27, 11) → (26, 11) → (26, 13).

(30, 13) → (30, 12) → (31, 11).

(22, 11) → (22, 13) → (23, 13).

(30, 11) → (30, 12) → (31, 13).

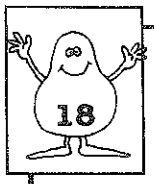
Why are convicts the slowest talkers in the world?



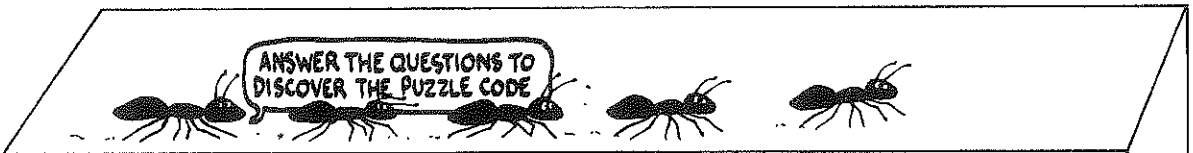
DRAW STRAIGHT LINES CONNECTING THE DOTS NEXT TO THE QUESTIONS (ON THE LEFT AND RIGHT SIDES OF THE PAGE) TO THE DOTS NEXT TO THE CORRECT ANSWERS IN THE CENTRE. THE TWO LINES CONNECTED TO EACH ANSWER WILL PASS THROUGH A LETTER AND NUMBER GIVING THE PUZZLE CODE.

2)82	29	5)710
5)620	96	3)1293
3)87	668	5)415
4)568	41	4)516
2)166	175	4)2672
3)471	83	3)123
5)1015	788	5)3940
4)384	142	2)248
3)387	567	4)2268
2)1576	129	3)609
4)1724	77	4)116
3)2004	124	2)350
5)875	203	2)314
4)308	431	3)231
2)1134	157	5)480

1	2	3	4	5	6	3	7	8	4	3	9	10	5	1	10	4	11	7	12
1	13	14	11	7	11	5	2	9	5	3	7	1	3	7	15	3	!		



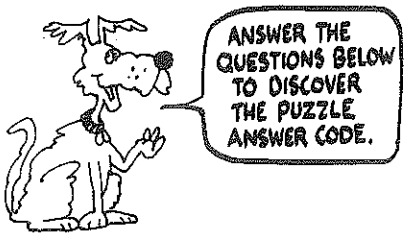
Why did the ants run along the biscuit box?

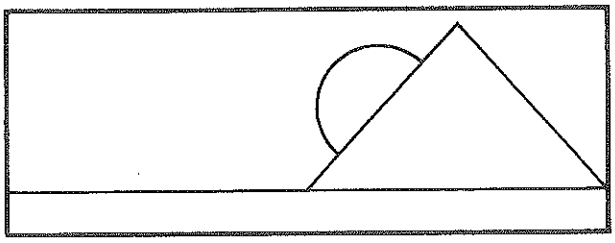


u $= 200 \div 10$ $=$	**t** $= \frac{500\,000}{10\,000}$ $=$
l $= 50\,000 \div 100$ $=$	**r** $= 800 \div 100$ $=$
e $= \frac{3000}{1000}$ $=$	**i** $= \frac{20\,000}{10}$ $=$
n $= 80\,000 \div 1000$ $=$	**g** $= 700\,000 \div 1000$ $=$
o $= 7000 \div 100$ $=$	**c** $= 6\,000\,000 \div 100\,000$ $=$
s $= \frac{600\,000}{100}$ $=$	**h** $= 20\,000 \div 100$ $=$
d $= 30\,000 \div 100$ $=$	**a** $= 6000 \div 10$ $=$

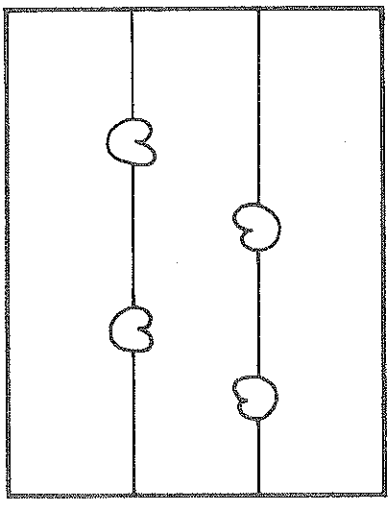
50	200	3	2000	80	6000	50	8	20	60	50	2000	70	80	6000
6000	600	2000	300	50	3	600	8	600	500	70	80	700		
50	200	3	300	70	50	50	3	300	500	2000	80	3		

Name these pictures





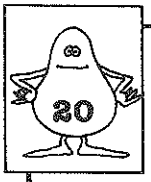
a = 600 ÷ 20 =	**g** = 58 200 ÷ 600 =	**p** = 8730 ÷ 30 =
b = 2700 ÷ 300 =	**i** = 24 000 ÷ 8000 =	**r** = 93 200 ÷ 400 =
c = 720 ÷ 40 =	**l** = 24 300 ÷ 900 =	**s** = 8000 ÷ 50 =
d = 2450 ÷ 70 =	**m** = 314 000 ÷ 2000 =	**t** = 8520 ÷ 60 =
e = 60 500 ÷ 500 =	**n** = 52 500 ÷ 700 =	**u** = 18 000 ÷ 3000 =
	o = 5400 ÷ 90 =	**y** = $\frac{57\,000}{200}$ =



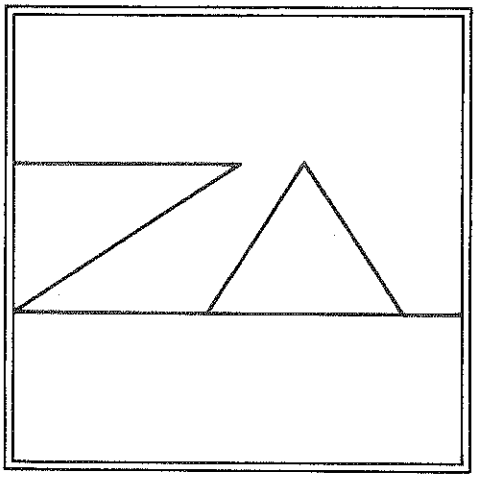
291	285	233	30	157	3	35	30	142	160	6	75	160	121	142

30	291	3	97	18	27	3	157	9	3	75	97

30	27	30	157	291	291	60	160	142



What is this?



R = 2612 ÷ 4
=

A = 5145 ÷ 7
=

P = 4626 ÷ 9
=

I = 3912 ÷ 6
=

D = 9027 ÷ 3
=

S = 7128 ÷ 8
=

C = 4290 ÷ 5
=

O = 2254 ÷ 7
=

G = 874 ÷ 2
=

V = 3400 ÷ 8
=

E = 5262 ÷ 6
=

T = 7803 ÷ 9
=

W = 837 ÷ 3
=

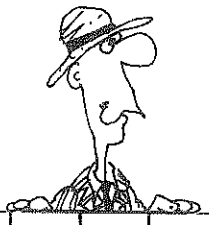
H = 5264 ÷ 8
=

U = 2690 ÷ 10
=

N = 924 ÷ 7
=

J = 936 ÷ 4
=

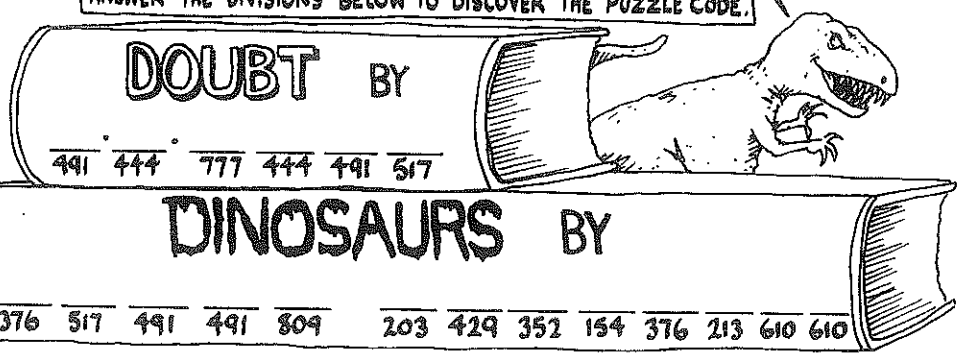
M = 8721 ÷ 9
=



735	891	658	652	514	735	653	653	652	425	652	132	437	234	269	891	867
652	132	867	652	969	877	867	322	891	735	425	877	735				
3009	653	322	279	132	652	132	437	279	652	867	858	658				

Who wrote these books?

ANSWER THE DIVISIONS BELOW TO DISCOVER THE PUZZLE CODE.



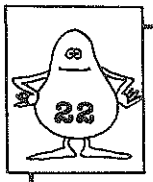
DOUBT BY

491 444 777 444 491 517

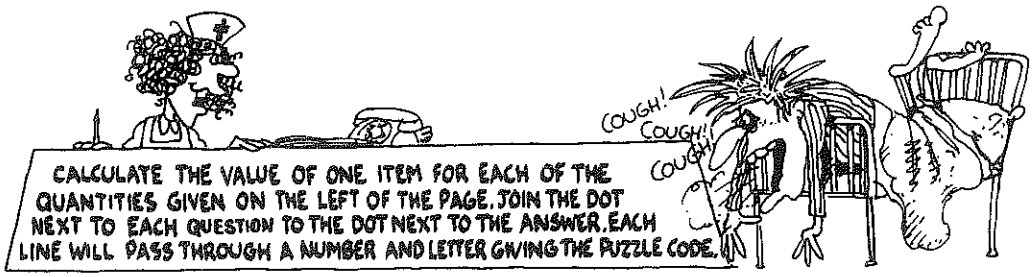
DINOSAURS BY

376 517 491 491 809 203 429 352 154 376 213 610 610

$15\overline{)6435}$ **A**	$65\overline{)13\,845}$ **I**	$27\overline{)20\,979}$ **S**
$21\overline{)7392}$ **C**	$16\overline{)2464}$ **K**	$14\overline{)5264}$ **T**
$33\overline{)6699}$ **D**	$24\overline{)14\,640}$ **L**	$32\overline{)14\,208}$ **U**
$13\overline{)6721}$ **E**	$17\overline{)8347}$ **R**	$18\overline{)14\,562}$ **Y**



Why was the patient's cough better in the morning?

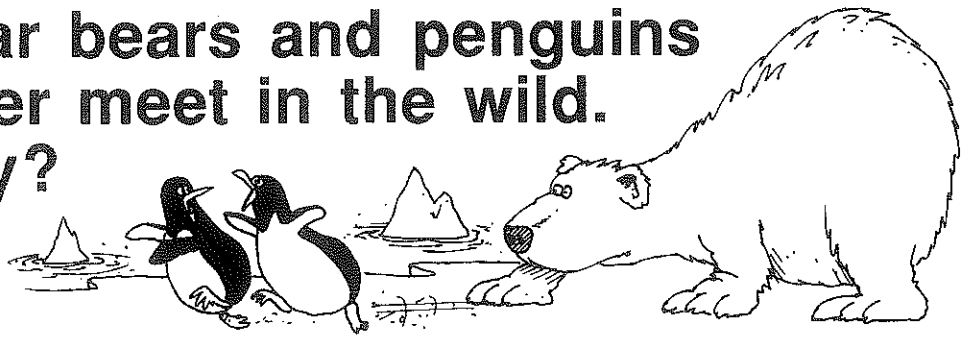


CALCULATE THE VALUE OF ONE ITEM FOR EACH OF THE QUANTITIES GIVEN ON THE LEFT OF THE PAGE. JOIN THE DOT NEXT TO EACH QUESTION TO THE DOT NEXT TO THE ANSWER. EACH LINE WILL PASS THROUGH A NUMBER AND LETTER GIVING THE PUZZLE CODE.

7 golf balls cost 1960 cents.		125 g
A 1000 g cake is cut into 8 pieces.		180¢
4 buses end to end are 52 m long.		87¢
A 1015 mL bottle just fills 7 glasses.		17 m
3600 cents divided equally between 20 children.		145 mL
12 coins weigh a total of 924 g		280¢
15 similar tape measures cover a total of 255 m		15 g
6 full cups of water just fill a 1710 mL container.		77 g
9 salad rolls cost 783 cents.		13 m
A 360 g packet of chocolate is divided into 24 pieces.		285 mL

1	2	D	B	2	2	3		
4	R	5	C	6	7	8	7	3	9
5	10	10	3	7	9	1	6		

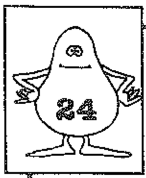
Polar bears and penguins never meet in the wild. Why?



Answer the questions to discover the puzzle code.

r $= 2 \times 15 - 14$ $=$	**s** $= 72 \div (3 \times 4) + 3$ $=$	**t** $= 20 - 10 \div 2$ $=$
o $= 6 \times (30 \div 5)$ $=$	**c** $= 25 \div 5 + 5$ $=$	**i** $= 24 - (10 + 12)$ $=$
a $= (25 + 5) \div 6$ $=$	**e** $= (8 + 22) \div 10 \times 4$ $=$	**b** $= 8 + 10 \div 5 \times 3$ $=$
g $= 800 \div 20 \div 2$ $=$	**v** $= 2 + 7 \times 4$ $=$	**n** $= 74 + 9 \times 3 - 1$ $=$
l $= 2 \times 3 \times 4 - 3$ $=$	**u** $= 6 \times 15 - 20$ $=$	**y** $= 8 \times 7 - 95 \div 5$ $=$
d $= 160 \div 5 \div 4$ $=$	**p** $= 4 \times 3 \div 2 + 1$ $=$	**h** $= (6 + 5 \times 2) \div 4$ $=$

	7	36	21	5	16	14	12	5	16	9	21	2	30	12
	2	100	15	4	12	5	16	10	15	2	10	5	100	8
7	12	100	20	70	2	100	9	21	2	30	12	36	100	21	37
	2	100	15	4	12	5	100	15	5	16	10	15	2	10	



Who invented the 5-day week?

SOLVE THE PROBLEMS BELOW. THE ANSWERS AND THE BOLD CAPITAL LETTER IN EACH QUESTION GIVE THE PUZZLE CODE.

Eggs cost 24¢ each. How much will a dozen eggs cost?

How much bigger than 127 m is 154 m?

What **I**s the sum of 27, 15, 63 and 92?

Divide 904 mL by 8.

Fi**N**d the difference between 163¢ and 87¢.

Find the p**R**oduct of 27 and 57 m.

H**O**w many 4 litre buckets of water can be removed from a trough of 292 litres?

Ca**L**culate the total of 21 mL, 63 mL, 120 mL and 82 mL.

A bill for $13 is paid for with a $50 note. How much change will there be?

Your brother is 47 cm shorter than you. If you are 182 cm tall, how tall is your brother?

Six times the sum of 17 and 23 gives what answer?

By what is 38 multiplied to give a product of $2356?

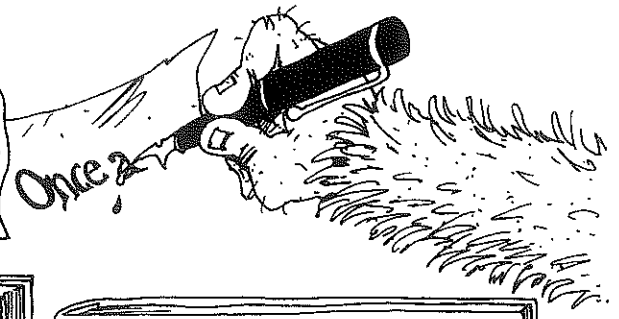
1539m	73	$62	197	76¢	240	73	76¢	C	1539m	U	240	73	288¢	•

27m	288¢	27m	$37	113mL	$37	286 mL	286 mL	27m	197	240	W	73	1539m	K

113mL	73	76¢	288¢	$62	135cm	F	1539m	197	113mL	$37	135cm	•

Find the author

FOR EACH BOOK, JOIN THE DOTS NEXT TO THE GIVEN NUMBERS FOUND (IN THE JUMBLE OF NUMBERS AND LETTERS) AT THE BOTTOM OF THE PAGE. YOUR LINE WILL PASS THROUGH LETTERS THAT WILL SPELL OUT THE AUTHORS NAME.



TIME TO EAT
BY
_____

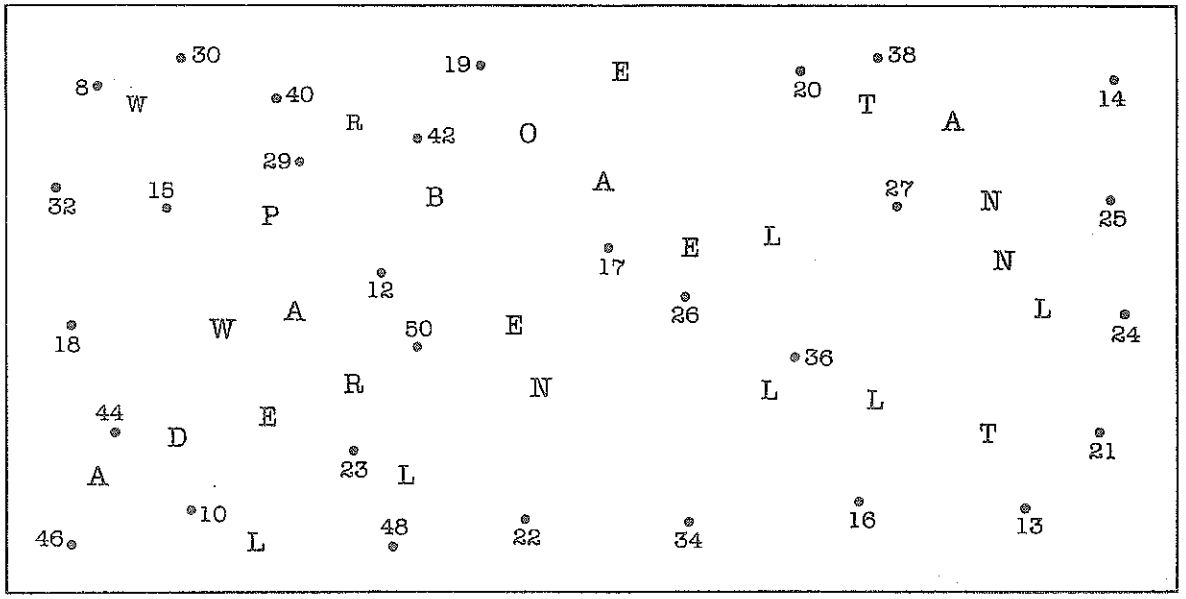
ASCENDING EVEN NUMBERS FROM 8 TO 26 INCLUSIVE.

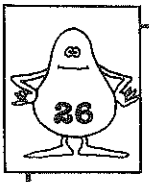
Jungle Animals
BY
_____

DESCENDING ODD NUMBERS BETWEEN 12 AND 30

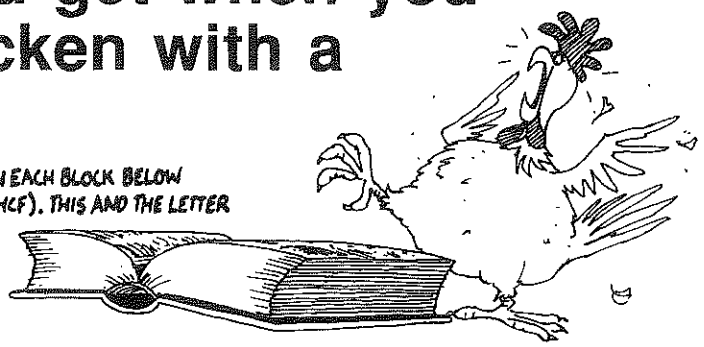
FITTING CARPETS
BY
_____

ASCENDING CONSECTIVE EVEN NUMBERS BETWEEN 29 AND 51





What do you get when you cross a chicken with a dictionary?



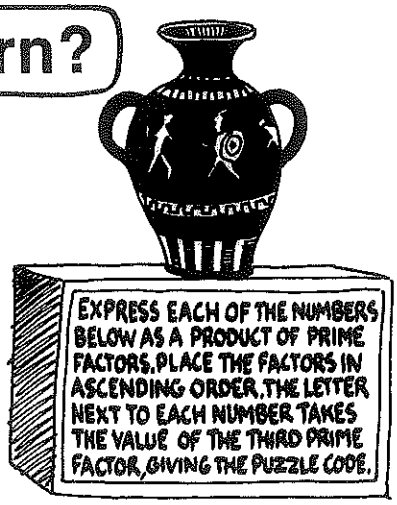
LIST THE FACTORS OF THE TWO NUMBERS IN EACH BLOCK BELOW THEN STATE THE HIGHEST COMMON FACTOR(HCF). THIS AND THE LETTER IN THE BLOCK GIVES THE PUZZLE CODE.

25 _____ _____ _____ 15 _____ _____ _____ HCF = _____ = **G**	14 _____ _____ _____ _____ 35 _____ _____ _____ _____ HCF = _____ = **L**
28 _____ _____ _____ _____ 8 _____ _____ _____ _____ HCF = _____ = **W**	26 _____ _____ _____ _____ 39 _____ _____ _____ _____ HCF = _____ = **O**
42 _____ _____ _____ _____ 14 _____ _____ _____ _____ HCF = _____ = **E**	24 _____ _____ _____ _____ 40 _____ _____ _____ _____ HCF = _____ = **G**
27 _____ _____ _____ _____ 45 _____ _____ _____ HCF = _____ = **A**	77 _____ _____ _____ _____ 44 _____ _____ _____ HCF = _____ = **N**
84 _____ _____ _____ _____ _____ _____ 36 _____ _____ _____ HCF = _____ = **F**	38 _____ _____ _____ _____ 57 _____ _____ _____ _____ HCF = _____ = **A**
6 _____ _____ _____ _____ 33 _____ _____ _____ _____ HCF = _____ = **U**	18 _____ _____ _____ 30 _____ _____ _____ HCF = _____ = **L**

12	13	4	6	7	9	11	5	3	19	8	14

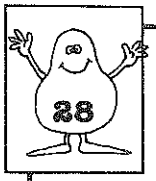
!

What's a Grecian urn?

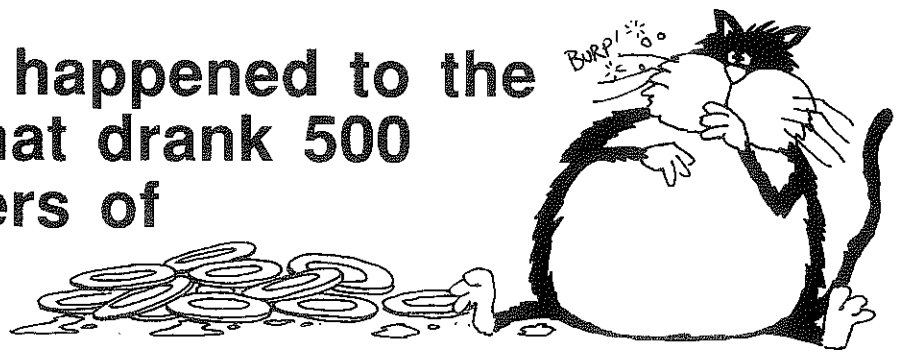


18 = _____ = _____ × _____ × _____ **y**	174 = _____ = _____ × _____ × _____ **o**
370 = _____ = _____ × _____ × _____ **a**	52 = _____ = _____ × _____ × _____ **i**
92 = _____ = _____ × _____ × _____ **f**	70 = _____ = _____ × _____ × _____ **l**
88 = _____ = ___ × ___ × ___ × ___ **r**	140 = _____ = ___ × ___ × ___ × ___ **t**
102 = _____ = _____ × _____ × _____ **d**	66 = _____ = _____ × _____ × _____ **b**
76 = _____ = _____ × _____ × _____ **u**	124 = _____ = _____ × _____ × _____ **s**

37	11	29	19	5	23	13	23	5	3
17	29	7	7	37	2	31	37	17	37	3



What happened to the cat that drank 500 saucers of milk?



Write down the first 6 multiples of each number given below. Find the lowest common multiple for the pairs (LCM). The letter with each pair of numbers and the LCM give the puzzle code.

2: ___ ___ ___ ___ ___ ___

3: ___ ___ ___ ___ ___ ___

LCM = _____ = A

5: ___ ___ ___ ___ ___ ___

4: ___ ___ ___ ___ ___ ___

LCM = _____ = O

6: ___ ___ ___ ___ ___ ___

9: ___ ___ ___ ___ ___ ___

LCM = _____ = S

7: ___ ___ ___ ___ ___ ___

14: ___ ___ ___ ___ ___ ___

LCM = _____ = P

12: ___ ___ ___ ___ ___ ___

18: ___ ___ ___ ___ ___ ___

LCM = _____ = D

8: ___ ___ ___ ___ ___ ___

6: ___ ___ ___ ___ ___ ___

LCM = _____ = T

10: ___ ___ ___ ___ ___ ___

15: ___ ___ ___ ___ ___ ___

LCM = _____ = W

15: ___ ___ ___ ___ ___ ___

20: ___ ___ ___ ___ ___ ___

LCM = _____ = C

75: ___ ___ ___ ___ ___ ___

50: ___ ___ ___ ___ ___ ___

LCM = _____ = L

8: ___ ___ ___ ___ ___ ___

20: ___ ___ ___ ___ ___ ___

LCM = _____ = N

9: ___ ___ ___ ___ ___ ___

15: ___ ___ ___ ___ ___ ___

LCM = _____ = R

7: ___ ___ ___ ___ ___ ___

1: ___ ___ ___ ___ ___ ___

LCM = _____ = I

45: ___ ___ ___ ___ ___ ___

30: ___ ___ ___ ___ ___ ___

LCM = _____ = E

7	24	18	90	24	6	40	90	30
150	6	14	45	90	60	20	45	36

What is a nudist?

Simplify each of the expressions below leaving your answers in index form. The letter with each question will take on the value of the index in the answer to give the puzzle code.

r $2^6 \times 2^{13} =$

m $3^{16} \div 3^9 =$

h $5^3 \times 5^8 \div 5^2 =$

u $7^6 \times 7^8 \times 7^{11} =$

o $11^{17} \div 11^{15} =$

a $3^{30} \div 3^{12} =$

f $\dfrac{5^8 \times 5^7}{5^{10}} =$

e $2^{21} \div 2^6 \div 2^4 =$

b $7 \times 7^3 =$

n $13^5 \times 13^6 \times 13^7 \times 13^3 =$

l $\dfrac{3^8 \times 3^{20} \times 3^5}{3^{18}} =$

c $2^2 \times 2^3 \times 2^4 \times 2^5 =$

i $\dfrac{7^5 \times 7^8}{7^3 \times 7^4} =$

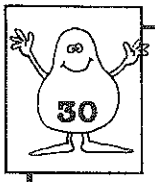
t $\dfrac{19^6}{19^5} =$

s $\dfrac{5^{18}}{5^2 \times 5^6} =$

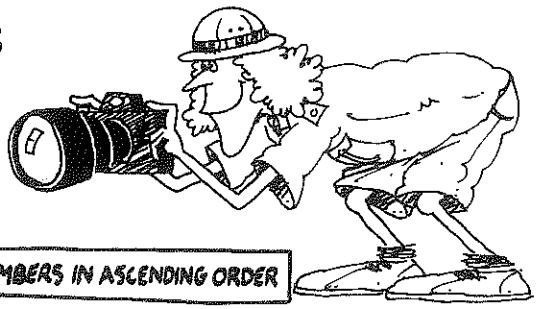
w $\dfrac{2^{18} \times 2^{22}}{2^8} =$

p $3^7 \times 3^5 \times 3^6 \times 3^8 =$

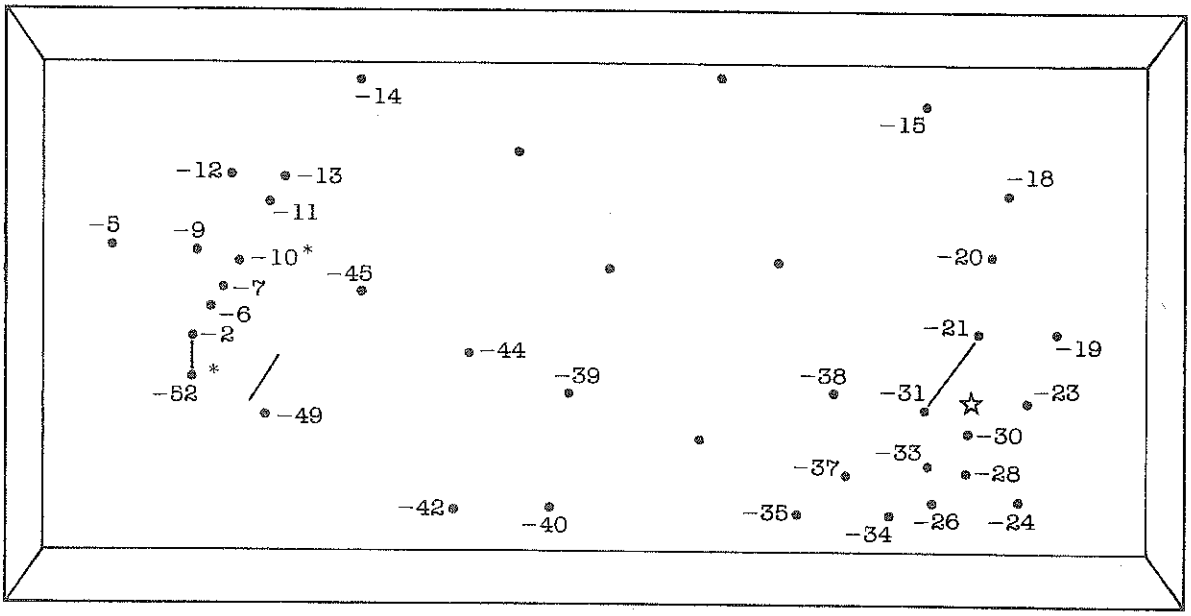
e	10	2	7	11	2	21	11	32	9	2	10	24	5	5	11	19	10
	5	19	2	7	14	15	2	1	9	11	10	1	19	2	26	9	2	4	6	18	g



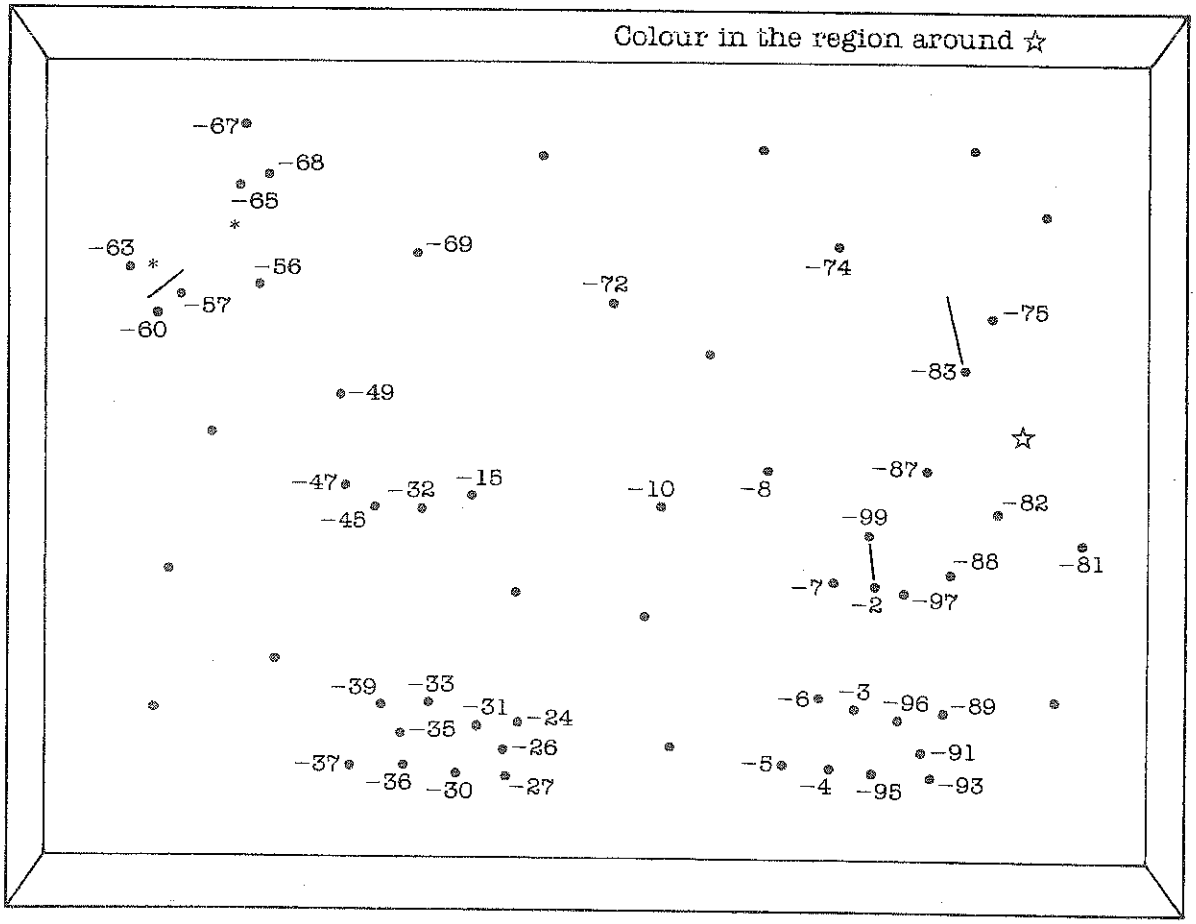
Find the animals



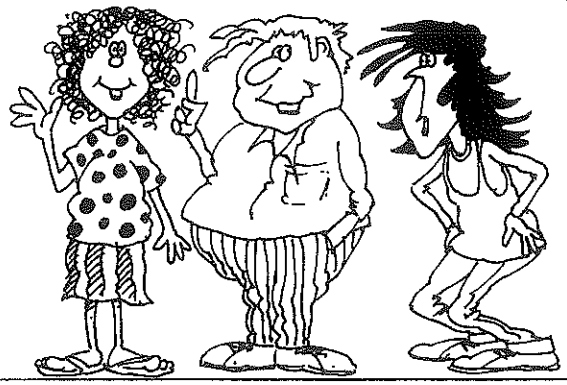
FOR EACH PICTURE JOIN THE DOTS NEXT TO THE NEGATIVE NUMBERS IN ASCENDING ORDER



LARGE DOTS AT *



Do you know the meaning of these names?



Find the sum of the numbers given. Join the dot next to the question to the dot next to the answer. Each line will pass through a number and letter giving the puzzle code.

$^{-}6 + {}^{-}7 =$ _____

$^{-}2 + {}^{-}8 =$ _____

$^{-}1 + {}^{-}2 + {}^{-}3 =$ _____

$^{-}15 + {}^{-}9 =$ _____

$^{-}7 + {}^{-}2 =$ _____

$^{-}4 - 3 =$ _____

$0 + {}^{-}5 + {}^{-}7 =$ _____

$15 + {}^{-}17 =$ _____

$^{-}34 + {}^{+}17 =$ _____

$5 + {}^{-}10 =$ _____

$^{-}13 + {}^{-}7 =$ _____

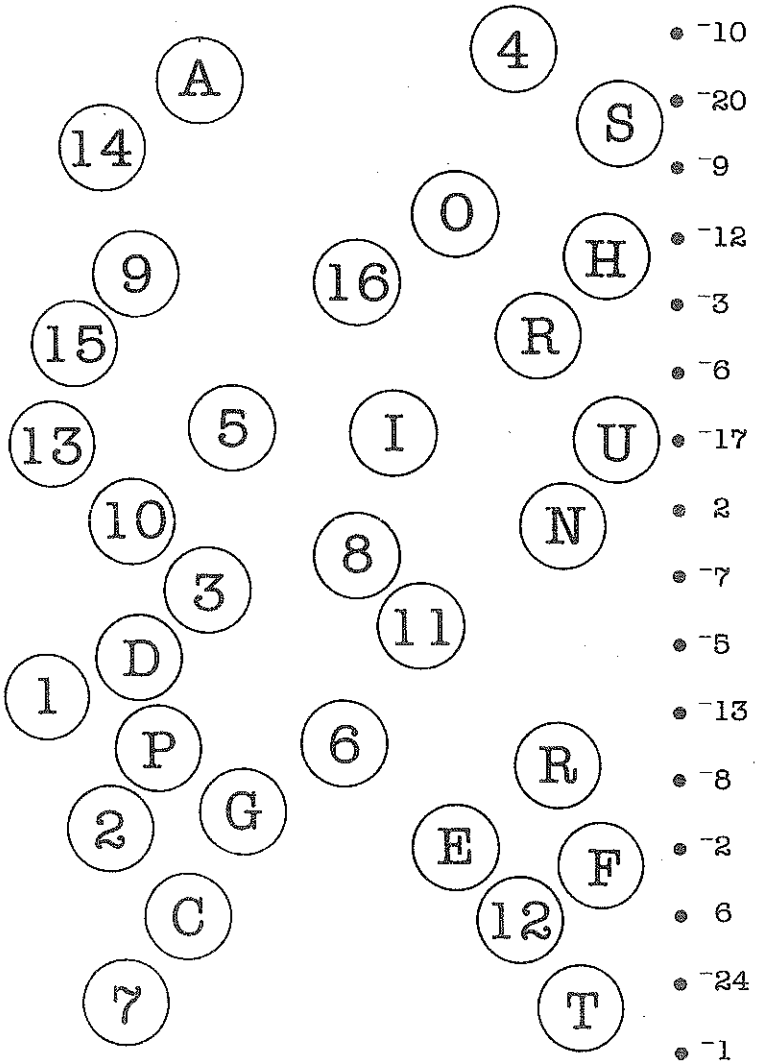
$^{+}17 + {}^{-}18 =$ _____

$^{-}6 + {}^{+}8 + {}^{-}5 =$ _____

$^{-}9 + 15 =$ _____

$^{-}4 + {}^{+}6 =$ _____

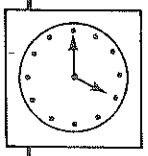
$^{-}13 + {}^{-}6 + {}^{+}11 =$ _____



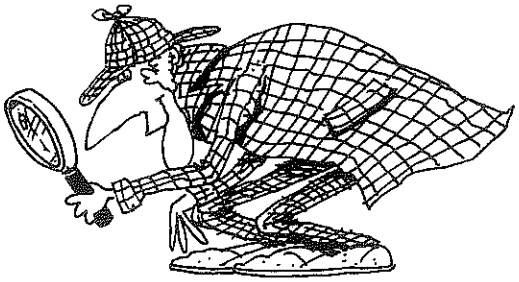
$^{-}10$
$^{-}20$
$^{-}9$
$^{-}12$
$^{-}3$
$^{-}6$
$^{-}17$
2
$^{-}7$
$^{-}5$
$^{-}13$
$^{-}8$
$^{-}2$
6
$^{-}24$
$^{-}1$

BARBARA –
DONALD –
SALLY –

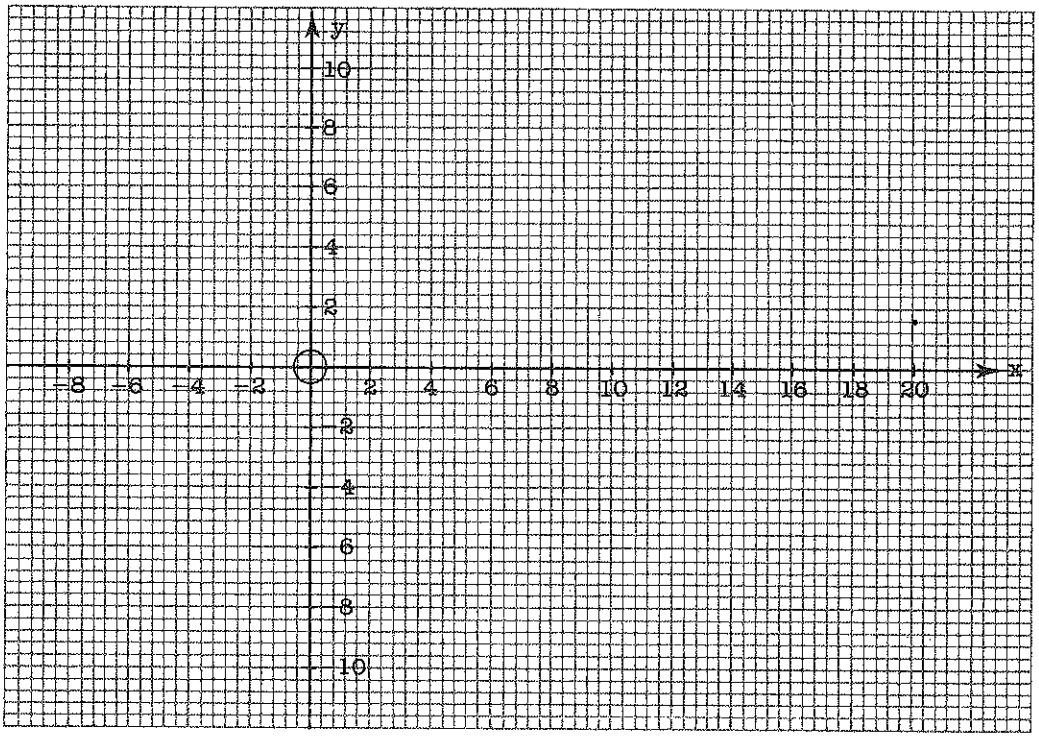
1	2	3	4	5	6	7	3
8	3	9	10	11	12	13	14	7	15
8	16	14	5	12	7	1	1



Discover me!



JOIN THE POINTS AS INDICATED IN THE JOINING ORDER.



JOIN (−5, −2) to (−3, −2) STOP.

JOIN (−2, −4) to (0, −4) STOP.

JOIN (12, 1) to (12, 2) to (14, 4) to (16, 4) STOP.

JOIN (13, 0) to (14, 1) to (15, 1) STOP.

JOIN (2, −9) to (4, −10) STOP.

JOIN (20, −7) to (14, 0) STOP.

Draw a large dot at (14, 2).

JOIN (−3, 0) to (−6, 2) to (−8, 4) to (−8, 6) to (−6, 9) to (−2, 11) to (6, 10) to (8, 8) to (10, 4) to (12, 6) to (14, 6) to (16, 4) to (16, 2) to (15, 1) to (20, −7) to (12, 1) to (4, 0) to (0, −4) to (2, −8) to (8, −9) to (8, −10) to (0, −10) to (−2, −4) to (0, 0) to (−3, −2) to (−3, −8) to $(-\frac{2}{3}, -8)$ to (0, −10) to (−5, −10) to (−4, −8) to (−5, −2) to (−3, 0) STOP.

Shade the region containing the point (4, 6) black.

Shade the regions containing (0, −7), (−4, −4) and (15, 0), orange.

JOIN (8, −2) to (9, −6) to (10, −4) to (11, −6) to (12, −2) STOP.

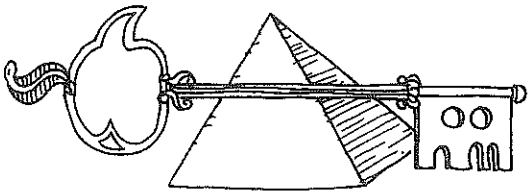
JOIN (6, −6) to (4, −4) to (4, −6) STOP.

JOIN (13, −2) to (13, −6) STOP.

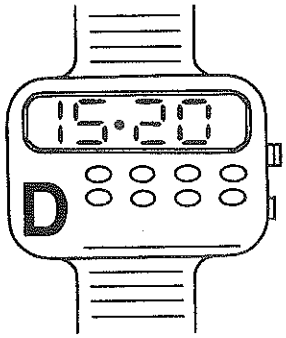
JOIN (7, −6) to (7, −2) STOP.

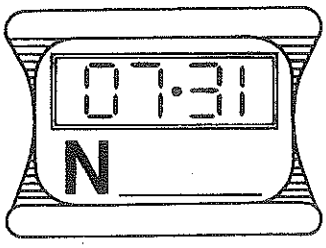
JOIN (4, −2) to (4, −4) to (6, −2) STOP.

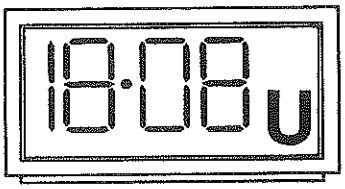
How do you get into a pyramid?

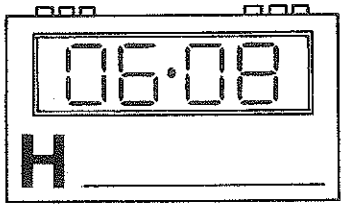


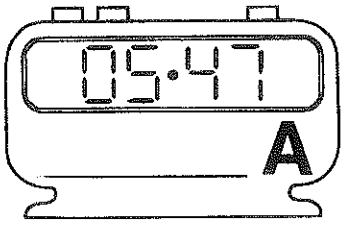
Express the following 24 hr clock times in 12 hr (a.m. or p.m.) clock time.
Each answer and the letter with each clock gives the puzzle code.

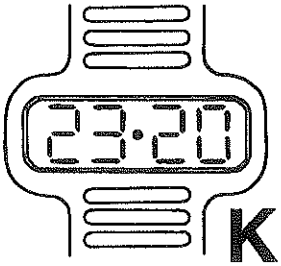


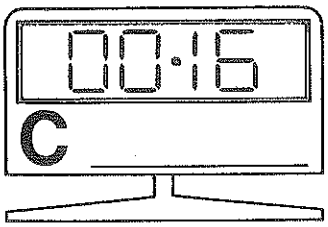


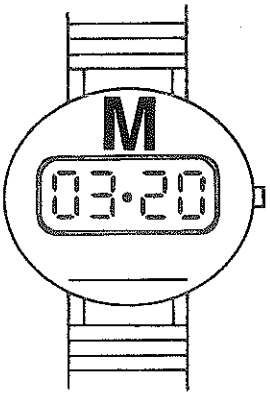


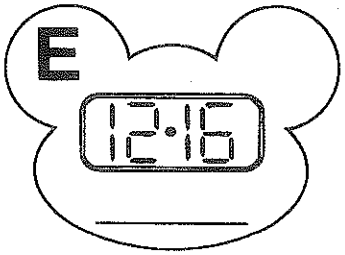


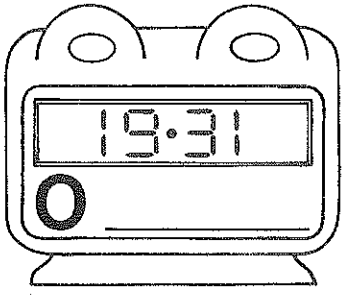


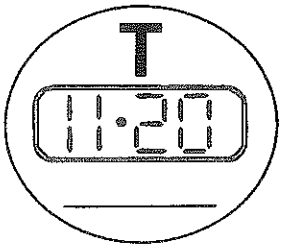


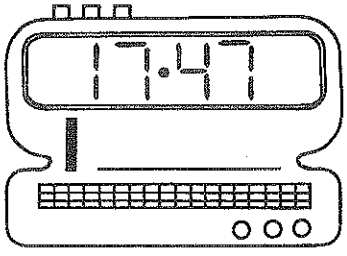












11:20am	7:31pm	7:31pm	11:20am	5.47am	7:31am	3:20pm	12:16am	7:31pm
3:20am	12:16pm	5:47pm	7:31am	11:20am	6:08pm	11:20am	5:47am	
7:31am	11:20pm	6:08am	5:47am	3:20am	6:08pm	7:31am		

Doctor, I feel like a curtain!

CONVERT THE TIMES GIVEN BELOW TO THE UNITS INDICATED

15 240 420 420 3600 24 240 1440 48 9 420 25

180 24 13 9 180 19 9 1440

Doctor, I feel like a dog

19 24 3 420 24 4 13 19 11 48

180 19 336 48 2 9 9 4 13 24 336 4 13 24 4

48 336 4 7 9 336 3 11 48 11 15 240 15

THE LETTER WITH EACH QUESTION AND THE ANSWER GIVES THE PUZZLE CODE

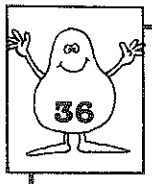
2 days = _____ hr. **s**	3 hrs = _____ min. **t**	7 mins. = _____ sec. **l**
96 hrs = _____ days. **n**	660 mins. = _____ hr. **a**	1500 sec. = _____ min. **f**
1 hr = _____ sec. **y**	1 day = _____ min. **r**	900 min = _____ hr. **p**
168 hr = _____ days. **c**	21 days = _____ wks. **w**	104 weeks = _____ yrs. **b**
2 yrs = _____ mths. **o**	540 min = _____ hr. **e**	2 weeks = _____ hrs. **i**
4 min = _____ sec. **u**	91 days = _____ wks. **g**	1140 min. = _____ hr. **h**

What's the difference between a well-dressed man and a tired dog?

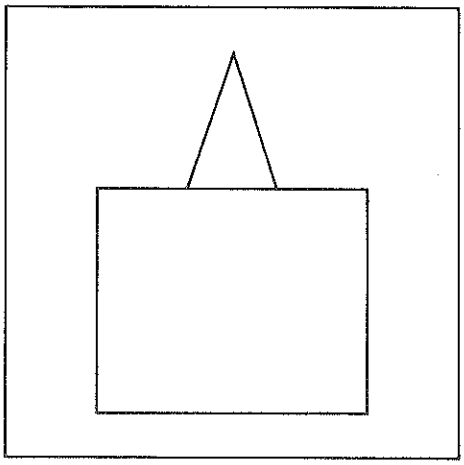
Answer the time questions to discover the puzzle code.

2 hr − 70 min = **H**	32 hr + 16 hr = **N**	20 sec × 18 = **S**	8 wks ÷ 14 = **J**
27 wks 15 wks 8 wks + 2 wks _____ **M**	54 min × 20 = **G**	8 min ÷ 15 = **A**	73 wks − 48 wks = **P**
30 min × 144 = **W**	59 min ÷ 60 = **E**	157 sec 248 sec + 75 sec _____ **U**	5 hr − $3\frac{1}{2}$ hr = **T**
$\frac{1}{4}$ of 3 mins = **O**	3 wks − 1 fortnight = **R**	22 min × 90 = **D**	217 min 154 min 308 min + 221 min _____ **I**

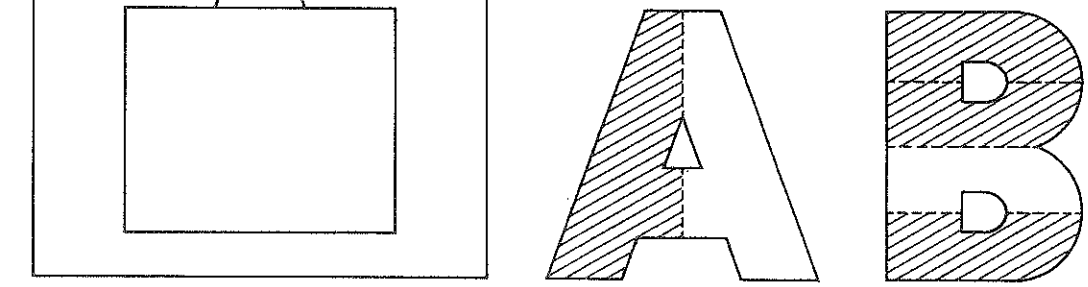
90 min	50 min	59 sec	1 yr	32 sec	2 days	3 days	59 sec	32 sec	7 days	6 min
32 sec	6 min	8 min	15 hr	90 min	90 min	50 min	59 sec	33 hr	45 sec	18 hr
4 days	8 min	6 min	90 min	25 wks	32 sec	2 days	90 min	6 min		

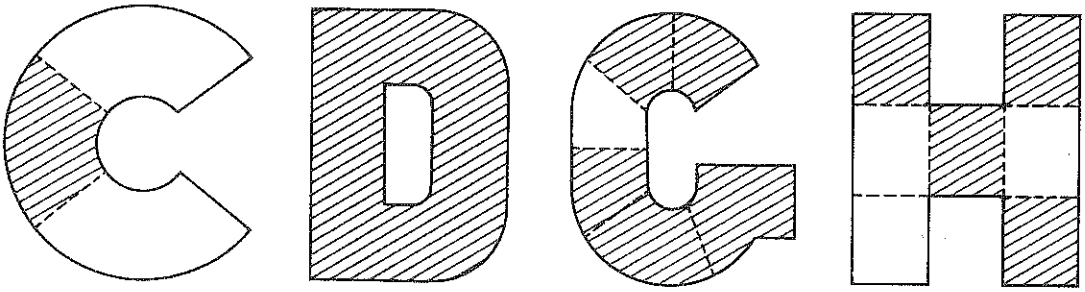


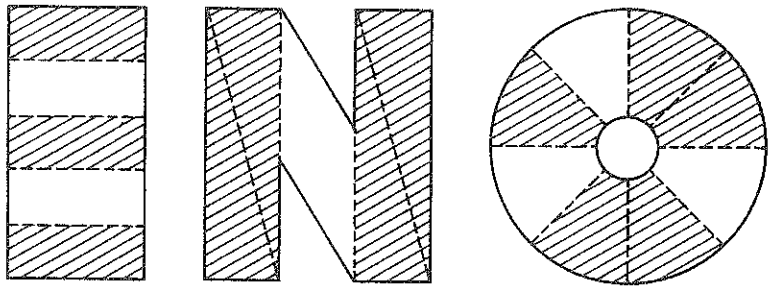
What is this?

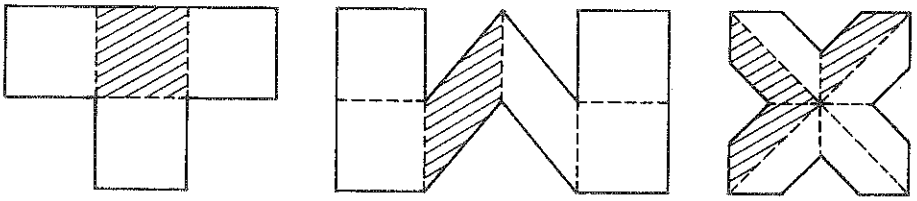


Each letter below takes on the value of the fraction shaded. This gives the puzzle answer code. Sections within each letter are of equal size.

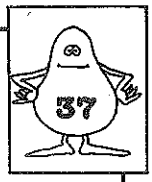








$\frac{1}{2}$	$\frac{1}{6}$	$\frac{3}{5}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{4}{7}$	$\frac{4}{7}$	$\frac{3}{5}$	1	$\frac{3}{5}$	$\frac{4}{5}$	$\frac{5}{6}$	$\frac{3}{5}$	$\frac{4}{5}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{3}{8}$

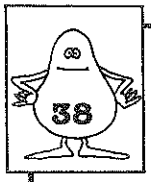


What is a pick-pocket?

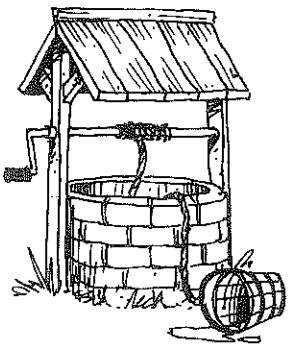
Calculate the fractions of the quantities given below in the units given. The letter with each question and the answer gives the puzzle code.

$\frac{3}{5}$ of \$65 = **0**	$\frac{6}{7}$ of 133 kg = **F**
$\frac{2}{3}$ of 18 hr = **E**	$\frac{7}{12}$ of 348 m = **R**
$\frac{3}{4}$ of \$96 = **W**	$\frac{4}{9}$ of 171 hr = **T**
$\frac{1}{6}$ of 1026 kg = **B**	$\frac{5}{11}$ of 638 m = **G**
$\frac{3}{8}$ of 144 hr = **N**	$\frac{4}{15}$ of \$345 = **M**
$\frac{9}{20}$ of 780 m = **I**	$\frac{4}{5}$ of 815 kg = **A**
$\frac{18}{25}$ of \$225 = **S**	$\frac{3}{7}$ of 266 hr = **H**

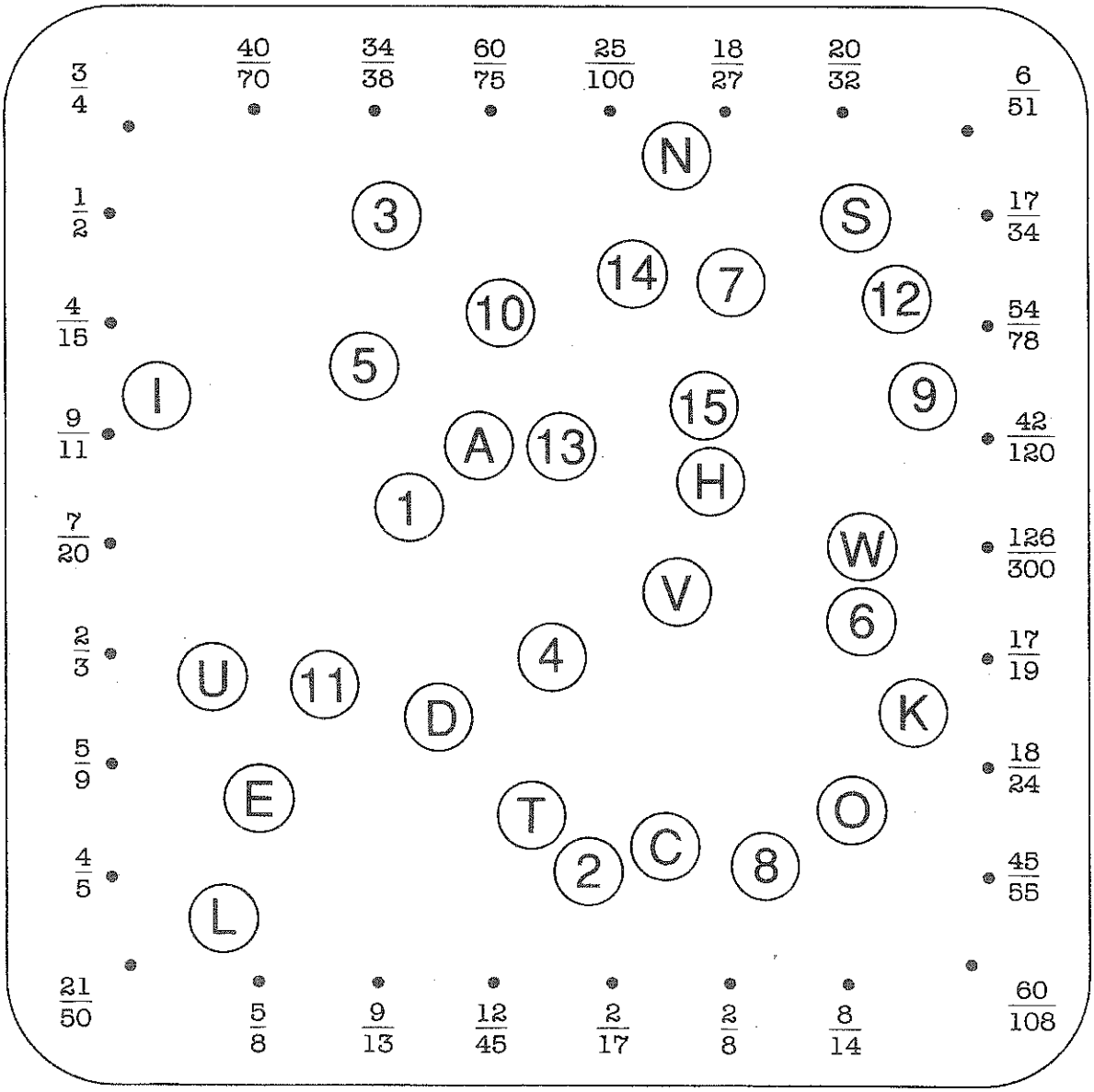
	\$162	\$39	\$92	12 hr	\$39	54 hr	12 hr	\$72	
351 m	76 hr	114 hr	76 hr	114 hr	12 hr	290 m	351 m	114 kg	
76 hr	\$39	114 kg	76 hr	114 hr	12 hr	290 m	203 m	652 kg	171 kg



The doctor fell into the well and broke his arm

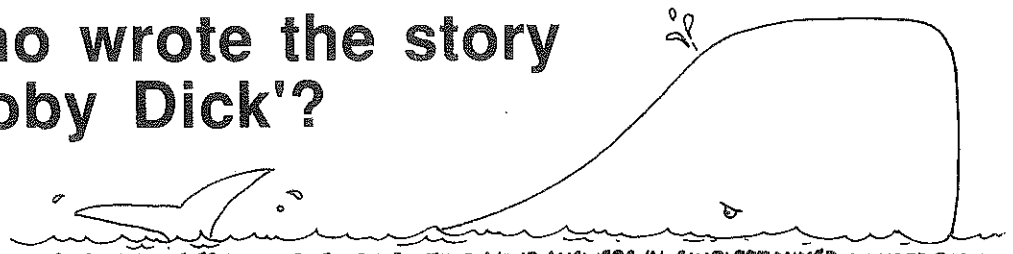


Draw straight lines connecting the dots next to equal fractions. Each line will pass through a letter and number giving the puzzle code.

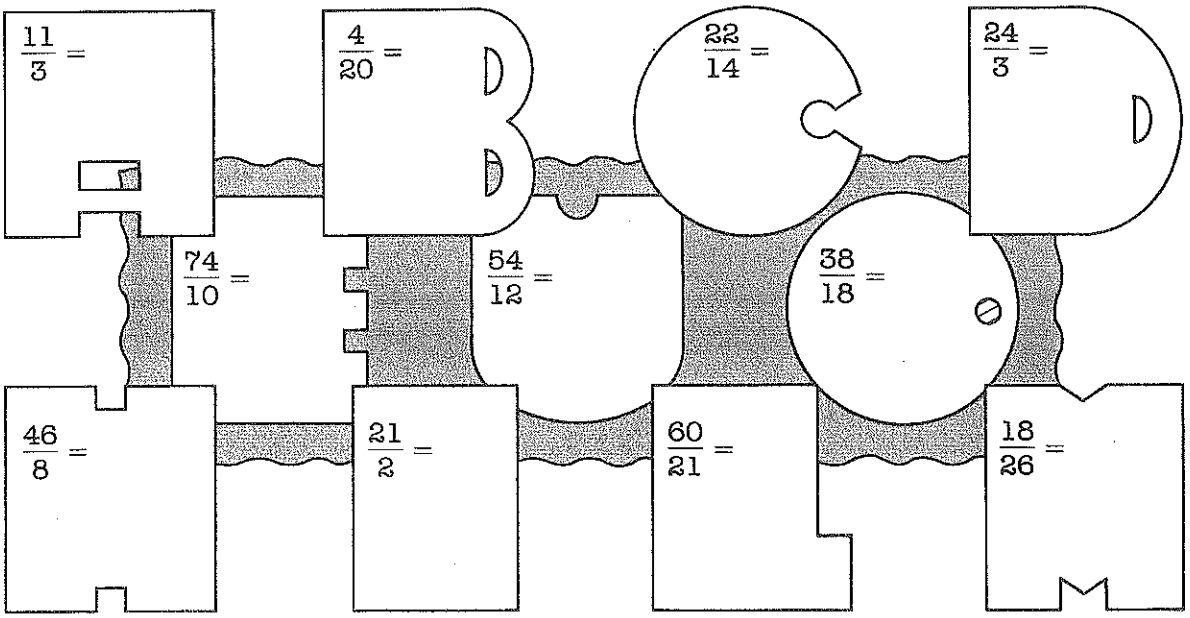


1	2	3	1	4	5	6	7	8	9	9	2	10	7
9	1	2	3	11	12	13	8	10	7	6	2	8	14	2
9	1	2	15	2	6	6	8	6	4	10	2		

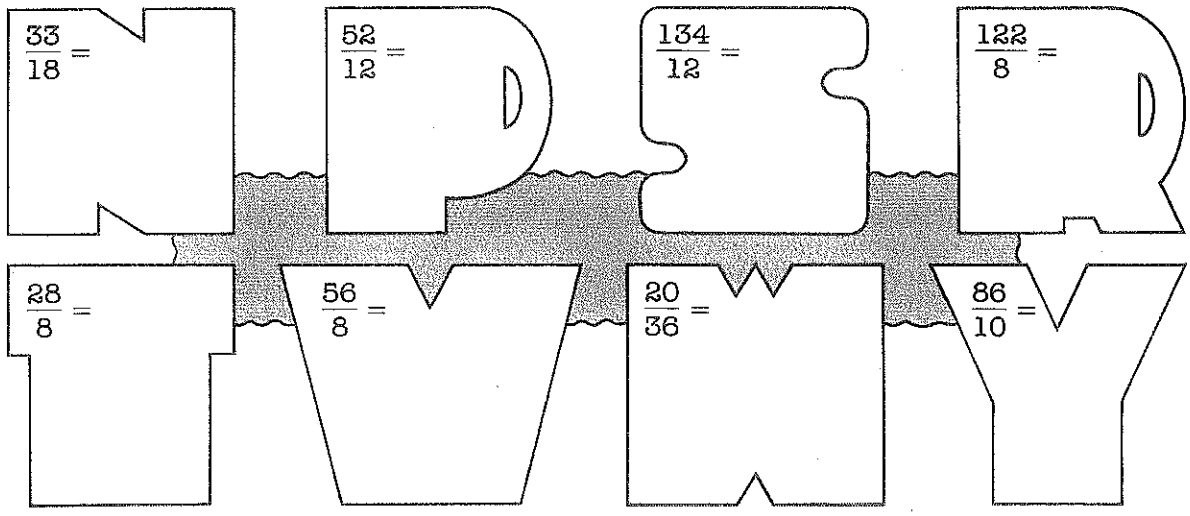
Who wrote the story 'Moby Dick'?



SIMPLIFY THE FRACTIONS GIVEN, STATING YOUR ANSWERS IN SIMPLEST MIXED NUMBER FORM. EACH ANSWER AND THE LETTER AROUND IT GIVES THE PUZZLE ANSWER CODE.



$5\frac{3}{4}$	$7\frac{2}{5}$	$15\frac{1}{4}$	$\frac{9}{13}$	$3\frac{2}{3}$	$1\frac{5}{6}$	$\frac{9}{13}$	$7\frac{2}{5}$	$2\frac{6}{7}$	7	$10\frac{1}{2}$	$2\frac{6}{7}$	$2\frac{6}{7}$	$7\frac{2}{5}$



$5\frac{3}{4}$	$7\frac{2}{5}$	$\frac{5}{9}$	$3\frac{2}{3}$	$11\frac{1}{6}$	$2\frac{1}{9}$	$1\frac{5}{6}$	$1\frac{4}{7}$	$7\frac{2}{5}$	$1\frac{4}{7}$	$3\frac{2}{3}$	$4\frac{1}{3}$	$3\frac{1}{2}$	$4\frac{1}{2}$	$15\frac{1}{4}$	$7\frac{2}{5}$	8

$\frac{1}{5}$	$8\frac{3}{5}$	$1\frac{4}{7}$	$3\frac{2}{3}$	$1\frac{5}{6}$	$1\frac{5}{6}$	$10\frac{1}{2}$	$\frac{1}{5}$	$3\frac{2}{3}$	$2\frac{6}{7}$	$11\frac{1}{6}$

What do you do when an elephant hurts its toe?

Add the following fractions to discover the puzzle code.

$2\frac{1}{2} + 3\frac{3}{4}$ = **A**

$\frac{5}{8} + \frac{1}{2} + \frac{3}{4}$ = **N**

$5\frac{6}{7} + 2\frac{3}{7} + 4\frac{4}{7}$ = **C**

$\frac{3}{7} + \frac{7}{8}$ = **O**

$3\frac{5}{6} + 2\frac{3}{8}$ = **F**

$1\frac{1}{2} + \frac{5}{9} + 2\frac{1}{6}$ = **T**

$\frac{17}{20} + \frac{3}{4} + \frac{2}{5}$ = **R**

$\frac{9}{10} + \frac{1}{4} + \frac{4}{5}$ = **G**

$3\frac{8}{12} + 2\frac{4}{6}$ = **U**

$2\frac{17}{20} + 5\frac{3}{10}$ = **I**

$\frac{1}{2} + \frac{1}{3} + \frac{1}{4}$ = **W**

$\frac{5}{6} + \frac{7}{8} + \frac{31}{24}$ = **K**

2	$8\frac{3}{20}$	$1\frac{7}{8}$	$1\frac{19}{20}$	$6\frac{5}{24}$	$1\frac{17}{56}$	2	$6\frac{1}{4}$
$4\frac{2}{9}$	$1\frac{17}{56}$	$1\frac{1}{12}$	$4\frac{2}{9}$	2	$6\frac{1}{3}$	$12\frac{6}{7}$	3

The Lord said unto Moses "come forth"

The letter next to each question takes on the value of the fraction subtraction in simplest mixed number form.

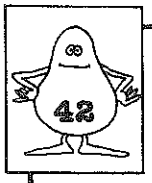
$\frac{7}{12} - \frac{3}{12} =$ L	$1\frac{1}{4} - \frac{3}{4} =$ N
$\frac{5}{8} - \frac{1}{3} =$ M	$5\frac{1}{3} - 5\frac{1}{5} =$ T
D $2 - \frac{3}{4} =$	$7 - 4\frac{2}{3} =$ H
F $3\frac{5}{6} - 1\frac{2}{3} =$	$5\frac{2}{5} - 3\frac{3}{5} =$ B
$2\frac{1}{2} - 1\frac{1}{10} =$ S	$3\frac{1}{4} - 1\frac{5}{6} =$ K
C $7\frac{4}{5} - 4 =$	$4\frac{3}{7} - \frac{7}{8} =$ I
U $1\frac{5}{9} - \frac{3}{4} =$	$3\frac{1}{2} - \frac{3}{4} - 2 =$ A
$7 - 2\frac{7}{10} - 1\frac{3}{5} =$ E	$4 - \frac{3}{4} - \frac{5}{6} =$ O
P $5\frac{3}{4} - 1\frac{9}{10} =$	

■	$1\frac{4}{5}$	$\frac{29}{36}$	$\frac{2}{15}$	$2\frac{1}{3}$	$2\frac{7}{10}$	$1\frac{2}{5}$	$\frac{1}{3}$	$3\frac{31}{56}$	$3\frac{17}{20}$	$3\frac{17}{20}$	$2\frac{7}{10}$	$1\frac{1}{4}$	$2\frac{5}{12}$	$\frac{1}{2}$

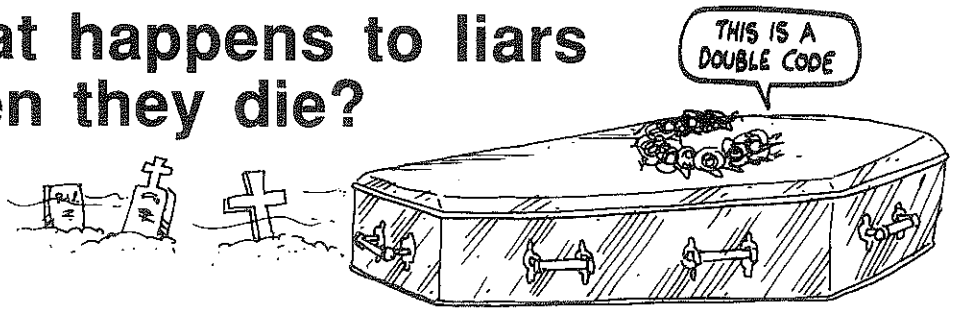
$\frac{3}{4}$	$1\frac{4}{5}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$1\frac{2}{5}$	$1\frac{5}{12}$	$3\frac{31}{56}$	$\frac{1}{2}$

$\frac{3}{4}$	$\frac{1}{2}$	$1\frac{1}{4}$	$3\frac{4}{5}$	$\frac{3}{4}$	$\frac{7}{24}$	$2\frac{7}{10}$	$2\frac{1}{6}$	$3\frac{31}{56}$	$2\frac{1}{6}$	$\frac{2}{15}$	$2\frac{1}{3}$

!



What happens to liars when they die?



Answer the questions in the first block. Transfer the letter next to each question to the question in the second block *which starts with the answer*. Finally, this letter and the answer to the second question gives the puzzle code.

L $2\frac{1}{2} \times \frac{1}{2} =$

T $\frac{4}{5} \times \frac{15}{16} =$

Y $12\frac{1}{4} \times \frac{4}{7} =$

I $\frac{3}{4} \times \frac{2}{9} \times 4\frac{4}{5} =$

E $\frac{8}{9} \times \frac{3}{16} =$

S $1\frac{2}{3} \times 2\frac{1}{10} =$

H $\frac{3}{7} \times \frac{14}{27} =$

○ $\frac{1}{6} \times 40\frac{1}{2} =$

○ $\frac{2}{9} \times 20\frac{1}{4} =$

○ $\frac{3}{4} \times 8\frac{4}{7} =$

○ $7 \times \frac{16}{21} =$

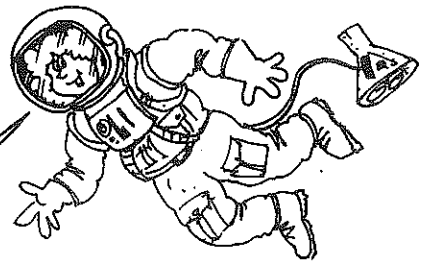
○ $1\frac{1}{4} \times 2\frac{2}{5} =$

○ $\frac{4}{5} \times 4\frac{2}{7} =$

○ $3\frac{1}{2} \times 2\frac{1}{14} =$

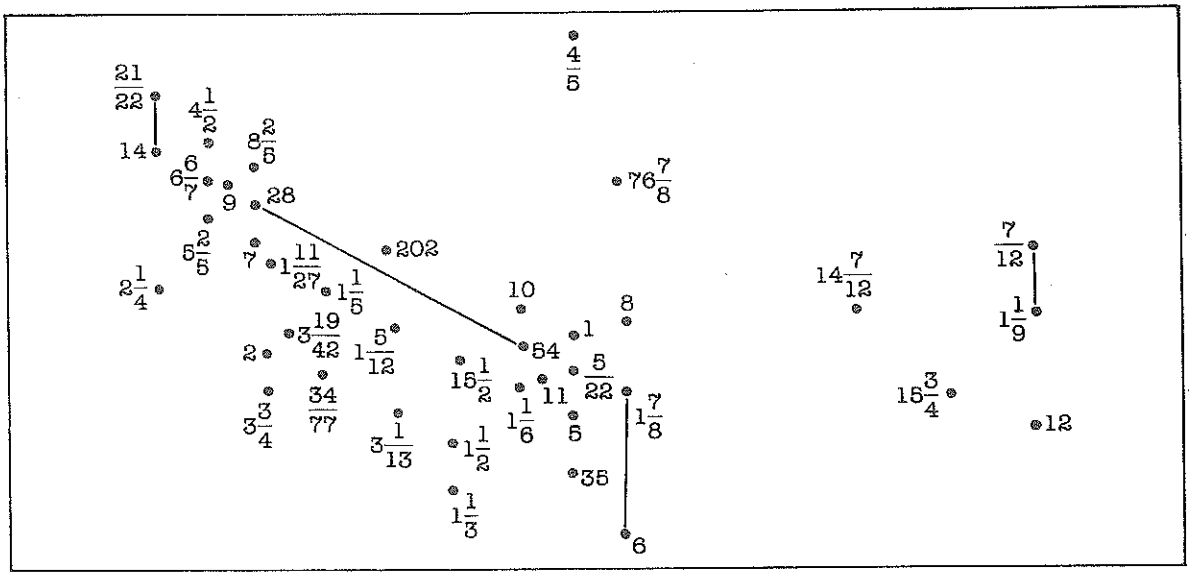
$6\frac{3}{7}$	$4\frac{1}{2}$	$6\frac{3}{4}$	$5\frac{1}{3}$	3	$3\frac{3}{7}$	$6\frac{3}{4}$	$7\frac{1}{4}$	$6\frac{3}{7}$	$3\frac{3}{7}$	3	3

Discovery time!



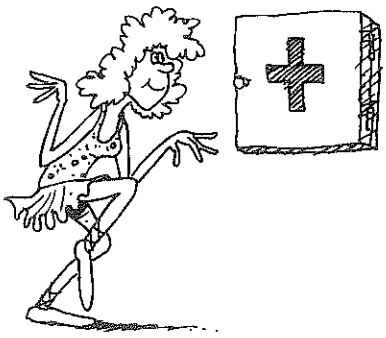
ANSWER THE QUESTIONS BELOW. FIND THE DOTS NEXT TO YOUR ANSWERS AND JOIN THEM IN THE ORDER INDICATED BY THE ARROWS.

$\frac{1}{2} \div \frac{1}{4} =$ →	$\frac{3}{4} \div \frac{1}{5} =$ →	$\frac{4}{5} \div \frac{3}{5} =$ →	$\frac{9}{10} \div \frac{3}{5} =$ →
$\frac{15}{16} \div \frac{5}{32} =$ →	$\frac{3}{7} \div \frac{1}{28} =$ →	$\frac{4}{9} \div \frac{2}{5} =$ →	$\frac{1}{4} \div \frac{2}{15} =$ →
$\frac{2}{11} \div \frac{4}{5} =$ →	$\frac{3}{5} \div \frac{3}{25} =$ →	$\frac{7}{15} \div \frac{2}{5} =$ →	$\frac{8}{11} \div \frac{4}{55} =$ →
$\frac{1}{2} \div \frac{1}{2} =$ →	$\frac{15}{22} \div 3 =$ →	STOP START	$\frac{15}{32} \div \frac{1}{4} =$ →
$\frac{12}{17} \div \frac{3}{34} =$ →	$\frac{1}{4} \div \frac{3}{7} =$ →	$\frac{5}{12} \div \frac{25}{48} =$ →	$\frac{7}{10} \div \frac{11}{15} =$ →
$\frac{2}{3} \div \frac{1}{12} =$	STOP START	$6 \div \frac{7}{8} =$ →	$3 \div \frac{5}{9} =$ →
$3\frac{1}{2} \div \frac{1}{2} =$ →	$5\frac{1}{4} \div \frac{5}{8} =$ →	$3\frac{2}{3} \div \frac{22}{27} =$ →	$13\frac{5}{7} \div 2$ →
$9\frac{4}{5} \div \frac{7}{10} =$ →	$6\frac{3}{4} \div 3 =$ →	$9\frac{5}{7} \div 4\frac{6}{7} =$ →	$6\frac{1}{3} \div 4\frac{1}{2} =$ →
$2\frac{1}{10} \div 1\frac{3}{4} =$ →	$1\frac{6}{11} \div 3\frac{1}{2} =$ →	$10 \div 3\frac{1}{4} =$ →	$8\frac{1}{2} \div 6 =$ →



$6\frac{1}{5} \div \frac{2}{5} =$ →	$\frac{9}{11} \div \frac{6}{11} =$	STOP

COLOUR IN BLACK THE REGIONS AROUND $8\frac{2}{7} \div 2\frac{2}{5} =$	
AND $5\frac{1}{4} \div \frac{7}{12} =$	AND $4\frac{4}{7} \div \frac{32}{77} =$
COLOUR THESE REGIONS IN BROWN $10\frac{1}{4} \div \frac{2}{15} =$	
$8\frac{3}{4} \div \frac{5}{9} =$	$20 \div \frac{4}{7} =$
$50\frac{1}{2} \div \frac{1}{4} =$	$\frac{7}{8} \div \frac{3}{50} =$



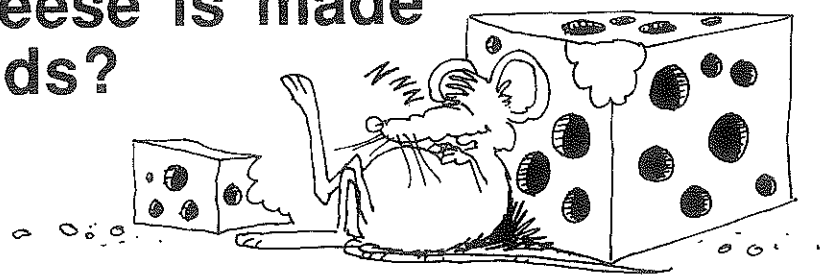
Why did the girl tiptoe past the medicine cabinet?

Answer the mixed fractions questions below. The letter with each question and its answer gives the puzzle code.

$\frac{2}{3} + \frac{3}{4} =$ **a**	$\frac{5}{8} - \frac{1}{4} =$ **d**
$\frac{4}{7} \times \frac{21}{40} =$ **e**	$\frac{18}{25} \div 1\frac{1}{5} =$ **g**
$2\frac{1}{8} + 3\frac{2}{3} =$ **h**	$8\frac{5}{6} - 3\frac{3}{4} =$ **i**
$2\frac{1}{2} \times 3\frac{1}{3} =$ **k**	$10 \div 2\frac{3}{4} =$ **l**
$5\frac{6}{10} + 2\frac{1}{4} + 1\frac{4}{5} =$ **n**	$6 - 2\frac{5}{7} =$ **o**
$1\frac{3}{4} \times 2\frac{1}{3} \times \frac{48}{49} =$ **p**	$12\frac{2}{3} \div 2\frac{1}{9} =$ **s**
$2\frac{7}{9} + 1\frac{1}{2} \times 2\frac{2}{3} =$ **t**	$5\frac{2}{5} \div \frac{9}{10} - 5\frac{1}{10} =$ **w**

6	$5\frac{19}{24}$	$\frac{3}{10}$	$\frac{3}{8}$	$5\frac{1}{12}$	$\frac{3}{8}$	$9\frac{13}{20}$	$6\frac{7}{9}$	$\frac{9}{10}$	$1\frac{5}{12}$	$9\frac{13}{20}$	$6\frac{7}{9}$
$6\frac{7}{9}$		$3\frac{2}{7}$		$\frac{9}{10}$		$1\frac{5}{12}$		$8\frac{1}{3}$		$\frac{3}{10}$	
$6\frac{7}{9}$		$5\frac{19}{24}$		$\frac{3}{10}$							
6	$3\frac{7}{11}$	$\frac{3}{10}$	$\frac{3}{10}$	4	$5\frac{1}{12}$	$9\frac{13}{20}$	$\frac{3}{5}$	4	$5\frac{1}{12}$	$3\frac{7}{11}$	$3\frac{7}{11}$	6

What cheese is made backwards?



Express each fraction on the left of the page as a percentage. If your answer is the **same** as that on the right of the page then colour in the entire strip containing the question. The letters remaining uncoloured will answer the puzzle.

W	$\frac{3}{4}$ =	75%
E	$\frac{1}{5}$ =	50%
C	$\frac{7}{10}$ =	70%
O	$\frac{3}{8}$ =	$37\frac{1}{2}\%$
U	$1\frac{1}{3}$ =	$133\frac{1}{3}\%$
L	$\frac{5}{6}$ =	$83\frac{1}{3}\%$
D	$\frac{6}{25}$ =	25%
A	$1\frac{1}{4}$ =	120%
L	$\frac{2}{5}$ =	40%
M	$\frac{2}{9}$ =	$22\frac{1}{3}\%$
O	$\frac{13}{20}$ =	65%
S	$\frac{38}{50}$ =	76%
T	$\frac{17}{30}$ =	$56\frac{2}{3}\%$
D	$\frac{1}{12}$ =	$8\frac{1}{3}\%$
O	$2\frac{2}{3}$ =	$266\frac{2}{3}\%$

Why did the baker stop making doughnuts?

IN EACH PROBLEM EXPRESS THE FIRST QUANTITY GIVEN AS A PERCENTAGE OF THE OTHER. THE LETTER WITH EACH PROBLEM AND THE ANSWER GIVE THE PUZZLE CODE.

b 250 g, 500 g

d 35 km, 175 km

e 26 hr, 40 hr

g \$19, \$20

h 13 pies, 50 pies

i 19 mL, 25 mL

l 2 cups, 5 cups

n 36¢, \$2

o 18 min, 2 hr

r 1200 m, $1\frac{1}{2}$ km

s 6 boys, 5 boys

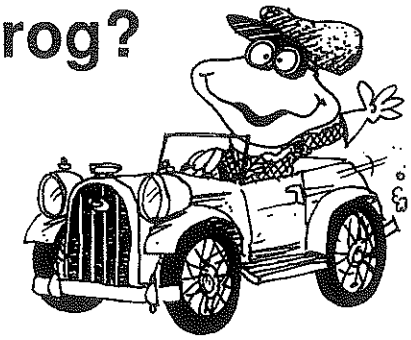
t 3 sec, 1 min

u 9 trees, 30 trees

f 12 pens, 8 pens

26%	65%	95%	15%	5%	5%	76%	80%	65%	20%	15%	150%
5%	26%	65%	26%	15%	40%	65%	50%	30%	120%	76%	18%	65%	120%	120%

When is a car like a frog?



Answer the percentage questions to discover the puzzle code.

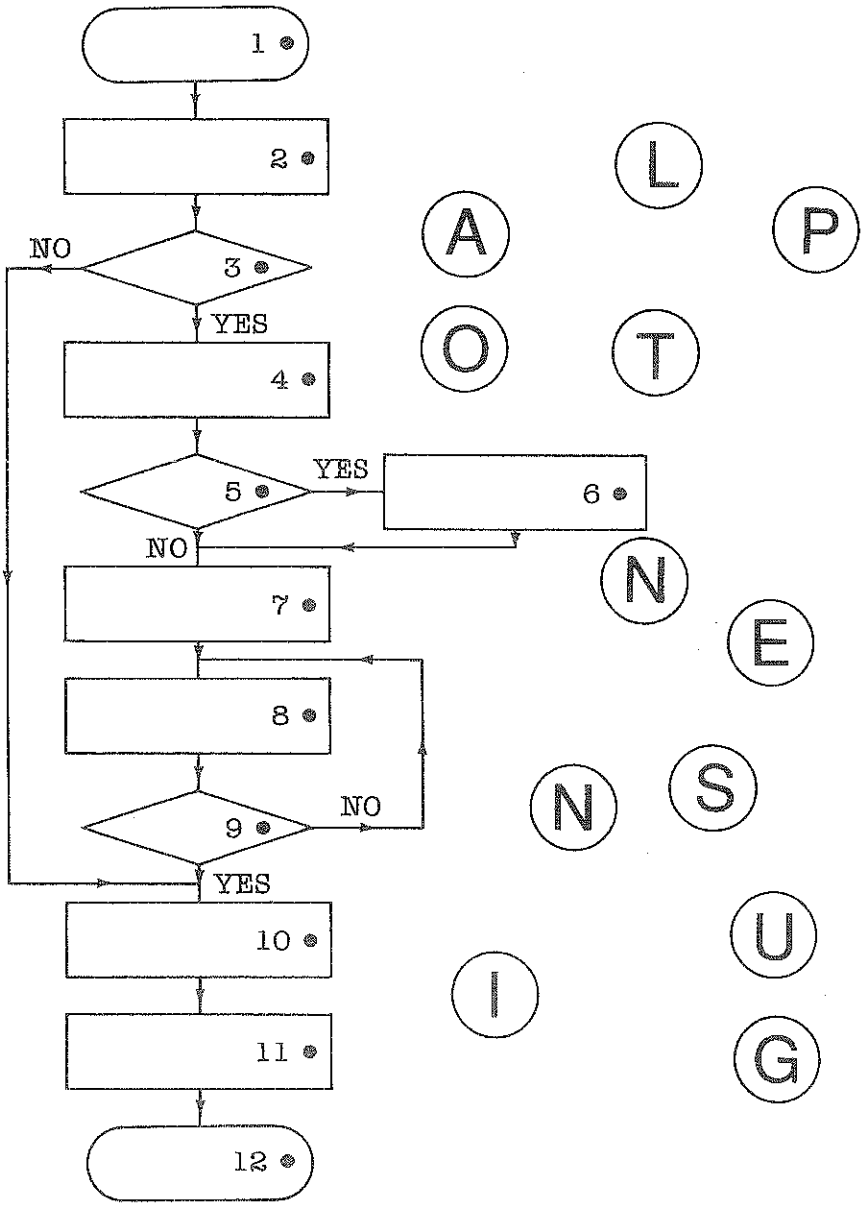
10% of \$350 = **a**	25% of 216 kg = **b**	$33\frac{1}{3}$% of $1\frac{1}{2}$ hr = **d**
92% of 125 min = **h**	80% of 165 kg = **g**	45% of \$180 = **e**
95% of \$160 = **i**	150% of 30 kg = **n**	5% of 5 hr = **o**
$12\frac{1}{2}$% of 632 min = **w**	70% of 110 kg = **t**	18% of \$550 = **s**

79 min	115 min	\$81	45 kg	\$152	77 kg	\$99	54 kg
\$81	\$152	45 kg	132 kg	77 kg	15 min	\$35	30 min

What's black and white and lives in the tropics?

Unscramble the flow chart instructions on the right and find each one's correct position in the chart (numbers 1 → 12). Join the dot on each instruction to the dot on the correct box with a straight line. Each line will pass through a letter giving the puzzle code.

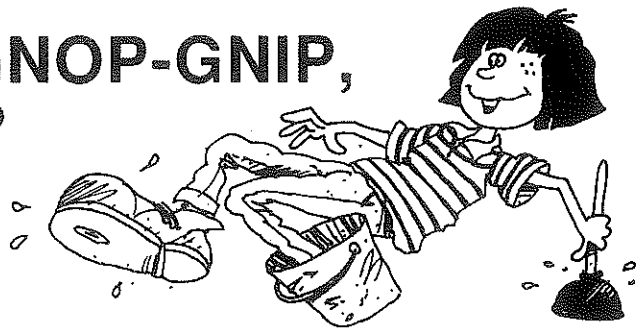
GOING TO THE PICTURES



- Buy something to eat
- Enter the theatre
- Are you hungry?
- STOP
- Watch the film
- Do you have enough money for a ticket?
- Go to your seat
- START
- Go home
- Leave the theatre
- Pay the cashier
- Is the film finished yet?

1	2	3	4	5	6	7	8	9	10	11	12

What goes GNOP-GNIP, GNOP-GNIP?



The letter beside each decimal number takes the value of the digit as indicated in brackets. This gives the puzzle code.

a = 0·3647 (hundredths)

1·3184 (thousandths) **w** =

b = 8·236 (tenths and hundredths)

c = 18·952 (thousandths)

d = 0·2345 (hundredths and thousandths)

i = 3·8596 (hundredths)

g = 4·3076 (units)

l = 7·2031 (hundredths)

k = 9·416 (tenths and hundredths)

o = 216·38 (hundreds and tens)

n = 2·4007 (ten thousandths)

r = 6·2714 (thousandths and ten thousandths)

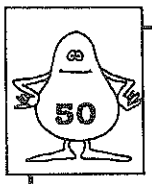
p = 15·1876 (tenths)

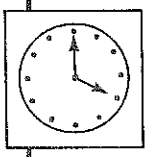
u = 0·5563 (ten thousandths)

s = 9·0073 (units)

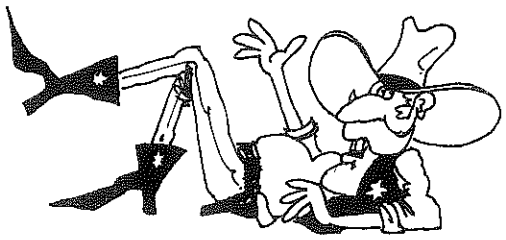
6	1	5	7	4		1	21	7	4	23	6	0	0

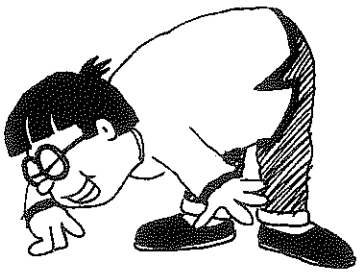
23	21	3	7	2	5	7	4	23	6	2	41	8	6	14	34	9



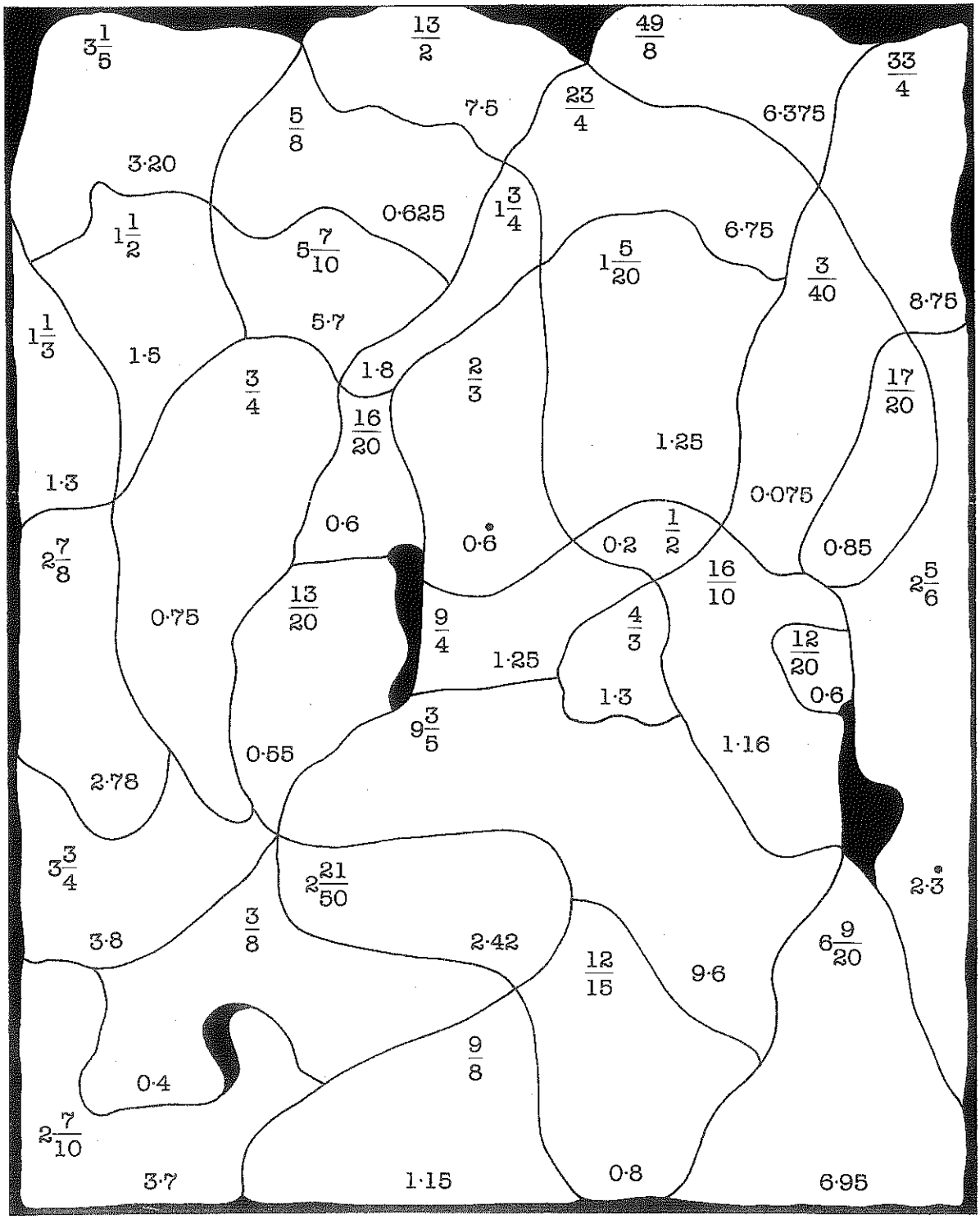


Find the 3 continents





Shade in the regions below where the fraction is **not** exactly the same as the decimal. The regions remaining will represent the 3 continents required.



Did you hear about the man who wanted to tap-dance?

Find the sum of each of the quantities below to discover the puzzle code.

a

\$3·40
\$2·73
+ \$1·85

b

2·6 g
5·3 g
+ 9·8 g

d

0·35 cm
1·92 cm
5·4 cm
+ 0·87 cm

e

\$0·54
\$1·96
\$3
\$2·17
+ \$0·88

f

0·5 g
0·8 g
1·3 g
2·6 g
+ 1·9 g

h

6·3 cm
2·4 cm
1·5 cm
+ 3·8 cm

i

\$5
\$2·50
\$1·76
+ \$3·95

k

0·813 g
1·766 g
+ 2·001 g

l

3·68 cm
1·96 cm
+ 5·36 cm

n

0·8762 g
0·0125 g
+ 1·3413 g

o

0·8 cm
6·1 cm
3·4 cm
+ 2·6 cm

r

\$6·15
\$2·34
\$8·70
\$2·37

s

0·3074 g
1·982 g
+ 2·2106 g

t

0·73 g
0·25 g
0·31 g
0·42 g
+ 0·17 g

14 cm	\$8·55	17·7 g	\$19·56	12·9 cm	4·58 g	\$8·55	14 cm	\$13·21	4·5 g	\$7·98
2·23 g	4·58 g	11 cm	\$8·55	\$7·98	2·23 g	8·54 cm	7·1 g	\$8·55	11 cm	
11 cm	\$13·21	2·23 g	1·88 g	14 cm	\$8·55	4·5 g	\$13·21	2·23 g	4·58 g	

How do you get 100 feet in the air?

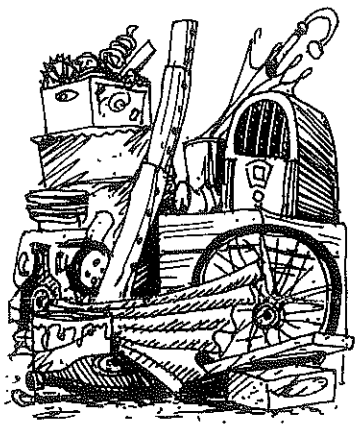
ANSWER THE DECIMAL SUBTRACTION QUESTIONS TO DISCOVER THE PUZZLE CODE.

21·63 − 4·82 = ____ **A**	6·205 − 3·41 = ____ **B**	
8·03 − 2·41 = ____ **C**	62·96 − 57·24 = ____ **D**	15·44 − 13·56 = ____ **E**
25·00 − 16·27 = ____ **I**	103·146 − 27·016 = ____ **K**	0·872 − 0·549 = ____ **L**
58·24 − 29·42 = ____ **N**	80·07 − 61·7 = ____ **O**	216·9 − 183·52 = ____ **P**
15 − 8·36 = ____ **R**	62·01 − 19 = ____ **S**	70 − 25·06 = ____ **T**

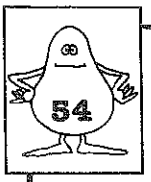
6·64	18·37	0·323	0·323	16·81	5·62	1·88	28·82	44·94	8·73	33·38	1·88	5·72	1·88
18·37	28·82	44·94	18·37	8·73	44·94	43·01	2·795	16·81	5·62	76·13			

Did you hear about the Junkyard?

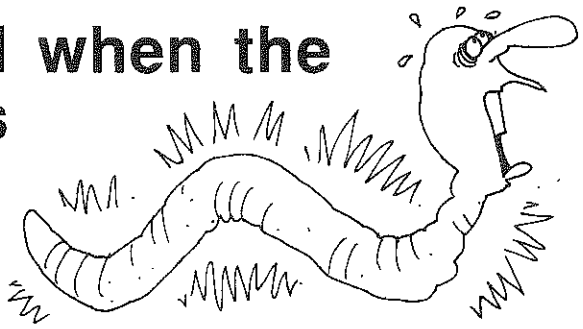
Answer the questions and use the code to get the message.

2·31 × 10 = **f**	0·674 × 100 = **o**	3·79 × 1000 = **r**
4·73 × 100 = **s**		0·231 × 10 = **o**
0·00674 × 1000 = **u**		3·79 × 10 = **h**
0·000473 × 10 000 = **b**	0·231 × 10 000 = **a**	0·0674 × 10 = **t**
0·0379 × 100 = **l**	0·0473 × 1000 = **i**	7·34 × 1000 = **d**

47·3	0·674	473	2310	3·79	67·4	2310	7340
2·31	23·1	3790	6·74	4·73	4·73	47·3	473	37·9

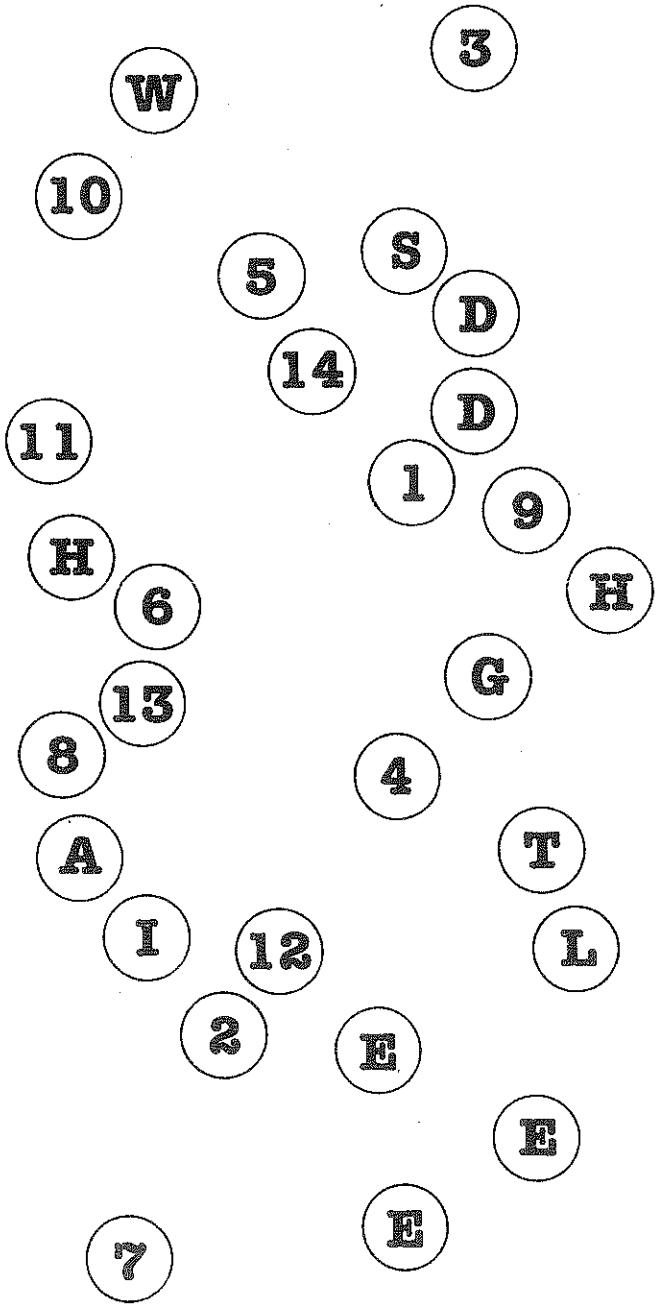


What happened when the glow-worm was tramped on?



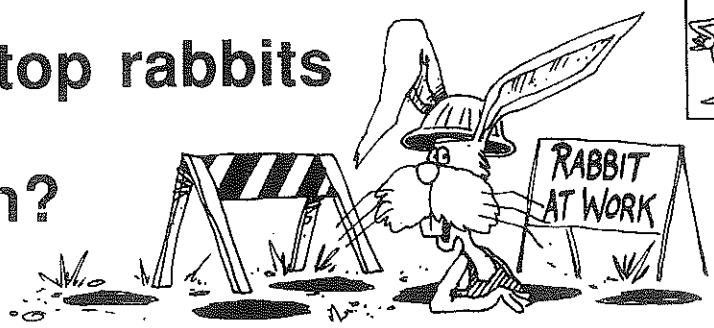
Join the dot next to each question on the left to the dot next to the correct answer on the right of the page. Each line will pass through a letter and a number giving the puzzle code.

2·3 × 20 =	16·2
0·54 × 30 =	32·4
0·81 × 400 =	62
0·031 × 2000 =	81
1·36 × 90 =	16·1
500 × 0·03 =	324
70 × 0·23 =	122·4
1·008 × 7000 =	3·2
0·054 × 600 =	178
40 × 0·08 =	46
1·5 × 80 =	7056
0·89 × 200 =	120
2·7 × 30 =	3·72
0·0093 × 400 =	15



1	2	3	4	5	6	7	8	9	10	11	12	13	14

How do you stop rabbits digging holes in your garden?

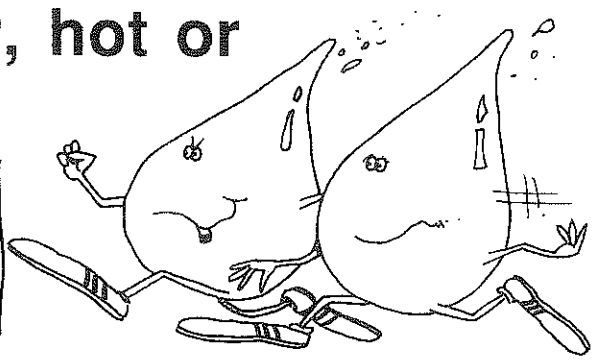


Answer the decimal products below. Colour in regions where the answer appears at the bottom of the page. The letters in the remaining regions will spell out the answer.

C 2.3×4.5	H 27×6.4	I 9.1×82	P 7.7×8.3
D 3.3×8.4	E 0.89×54	A 1.7×9.8	T 2.03×9.6
T 5.64×7.2	H 8.1×3.24	E 20.8×3.7	M 207.8×0.8
S 86.4×0.4	H 0.64×0.83	O 0.7×0.96	E 1.26×0.49
A 294×0.67	V 6.3×0.9	E 8.9×1.1	L 50.2×0.73

166·24 63·91 40·608 10·35 196·98 16·66 0·6174

Which is faster, hot or cold?



ANSWER THE GIVEN QUESTIONS THEN ARRANGE THE ANSWERS IN ASCENDING ORDER WITH THE LETTER GIVEN NEXT TO EACH QUESTION. THE NUMBER UNDER EACH ANSWER AND ITS LETTER GIVE THE CODE.

E 263 ÷ 100 =

U 54·2 ÷ 10 =

C 3750 ÷ 1000 =

O 8·3 ÷ 10 =

T 96·4 ÷ 100 =

Y 52 600 ÷ 1000 =

B 19·6 ÷ 10 =

S 735 ÷ 100 =

D 629 ÷ 10 =

A 4793 ÷ 1000 =

L 572·8 ÷ 10 =

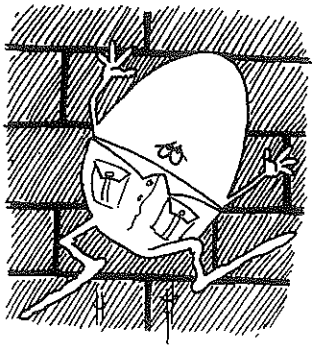
I 92 710 ÷ 10 000 =

H 50 ÷ 100 =

1	2	3	4	5	6	7	8	9	10	11	12	13

1	2	3	4	5	6	7	8	9	5	10	3	9
5	7	9	11	3	2	6	7	3	6	1	6	2	12	13

Humpty Dumpty had a great fall. All the King's horses and all the King's men said ...



Solve all the problems below to discover the puzzle code.

a = 16·2 ÷ 20
=

b = 150·5 ÷ 500
=

c = 63·9 ÷ 30
=

d = 2960 ÷ 1000
=

e = 106·4 ÷ 70
=

f = 1485·6 ÷ 400
=

g = 7120 ÷ 800
=

h = 56·88 ÷ 90
=

i = 2046 ÷ 600
=

k = 102·8 ÷ 40
=

l = 160·5 ÷ 50
=

m = 1224 ÷ 80
=

n = 1924 ÷ 200
=

o = 6·3 ÷ 300
=

p = 425·4 ÷ 60
=

q = 19 200 ÷ 4000
=

r = 34·86 ÷ 6
=

s = 8·52 ÷ 20
=

t = 97·2 ÷ 90
=

x = 194·1 ÷ 30
=

z = 1930·5 ÷ 500
=

8·9	0·021	1·08	0·021	1·08	0·632	1·52	9·62	1·52	6·47	1·08
3·21	1·52	1·08	1·08	1·52	5·81	3·41	9·62	1·08	0·632	1·52
0·81	3·21	7·09	0·632	0·81	0·301	1·52	1·08	3·714	0·021	5·81

"

15·3	9·62	0·426	5·81	0·301	4·8	3·861	3·21	0·81	2·57	2·96	2·13
2·96	3·714	3·714	5·81	3·861	3·714	3·861	0·632	15·3			

"

EVAN

0·138	15·9	8·9	0·88	6·33	2·38	5·8	8·47	8·47	3·6	15·9	8·47

$3\overline{)17{\cdot}4}$ = **A**

$5\overline{)7{\cdot}35}$ = **C**

$8\overline{)21{\cdot}6}$ = **E**

$2\overline{)6{\cdot}28}$ = **F**

$9\overline{)32{\cdot}4}$ = **I**

$4\overline{)25{\cdot}32}$ = **G**

$7\overline{)93{\cdot}8}$ = **L**

$6\overline{)5{\cdot}28}$ = **N**

$2\overline{)31{\cdot}8}$ = **O**

IRENE

1·17	2·7	5·8	1·47	2·7	3·14	8·9	13·4

WILLIAM

1·17	8·47	15·9	7·4	2·7	1·47	7·4	15·9	8·47

$8\overline{)9{\cdot}36}$ = **P**

$9\overline{)7{\cdot}38}$ = **S**

$6\overline{)44{\cdot}4}$ = **T**

$5\overline{)42{\cdot}35}$ = **R**

$3\overline{)26{\cdot}7}$ = **U**

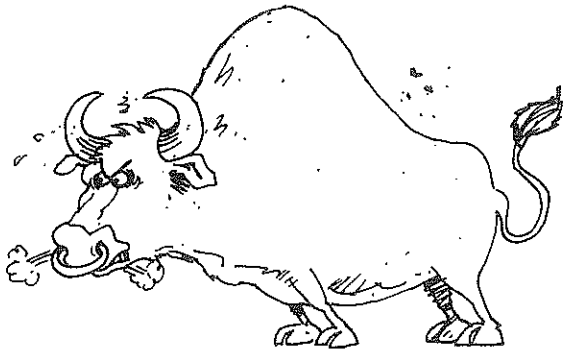
$4\overline{)9{\cdot}52}$ = **W**

$7\overline{)0{\cdot}966}$ = **Y**

SUSAN

5·8	8·47	15·9	0·82	2·7	15·9	8·47	13·4	3·6	13·4	0·138

Why is V like an angry bull?

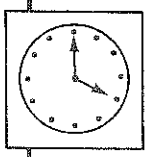


Answer the decimal divisions to find the puzzle code.

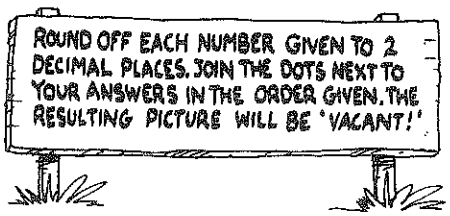
7·161 ÷ 2·1 =) = a	74·34 ÷ 0·9 =) = b	7·308 ÷ 1·2 =) = c
0·05886 ÷ 0·09 =) = e	13·64 ÷ 1·1 =) = f	9·872 ÷ 0·08 =) = i
0·2135 ÷ 0·007 =) = m	4·395 ÷ 1·5 =) = o	0·0806 ÷ 3·1 =) = r
2·442 ÷ 0·6 =) = s	0·902 ÷ 0·55 =) = t	2·864 ÷ 0·04 =) = u

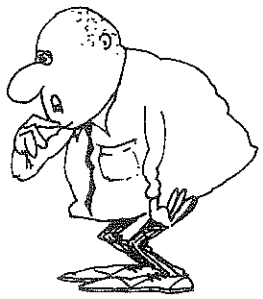
82·6	0·654	6·09	3·41	71·6	4·07	0·654	123·4	1·64

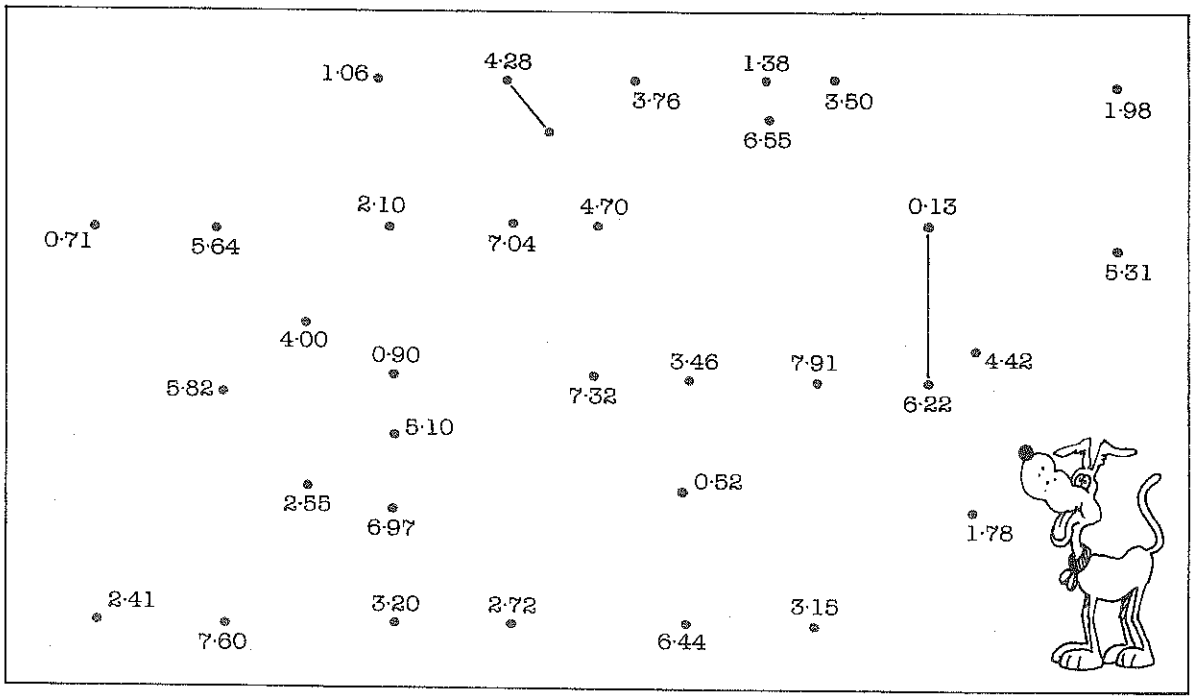
6·09	2·93	30·5	0·654	4·07	3·41	12·4	1·64	0·654	0·026	71·6



Find what is vacant







START
5·637 ≈
0·713 ≈
1·055 ≈
4·2834 ≈
5·6419 ≈
3·996 ≈
2·097 ≈
3·7552 ≈
1·384 ≈
7·037 ≈
2·7166 ≈
0·517 ≈
6·4444 ≈
3·1526 ≈
7·908 ≈

6·2193 ≈
5·3077 ≈
1·976 ≈
3·4961 ≈
4·697 ≈
0·1329 ≈
1·9848 ≈
STOP.

START
2·5471 ≈
5·096 ≈
6·9721 ≈
7·598 ≈
2·406 ≈
0·705 ≈
STOP.

START
4·4162 ≈
1·7839 ≈
3·1472 ≈
STOP.

START
2·7248 ≈
3·1964 ≈
6·967 ≈
STOP.

START
6·5471 ≈
1·3827 ≈
STOP.

START
5·1046 ≈
0·8962 ≈
2·547 ≈
5·816 ≈
7·6039 ≈
STOP.

START
4·6977 ≈
7·3162 ≈
3·455 ≈
0·5156 ≈
STOP.

START
2·1034 ≈
7·0369 ≈
STOP.

I'm so poor...

Change each fraction given to a decimal to discover the puzzle code.

$0{\cdot}8\overline{3}$	0·875	0·75	$0{\cdot}\overline{63}$	0·375	$0{\cdot}\overline{857142}$	0·75	$0{\cdot}083\overline{3}$

0·75	0·45	0·375	$0{\cdot}\overline{6}$	$0{\cdot}2\overline{6}$	0·45	$0{\cdot}\overline{4}$	$0{\cdot}41\overline{6}$	$0{\cdot}\overline{63}$

$\frac{3}{4}$ = ___ = **A**

$\frac{7}{8}$ = ___ = **C**

$\frac{2}{3}$ = ___ = **E**

$\frac{4}{9}$ = ___ = **I**

$\frac{7}{11}$ = ___ = **N**

$\frac{5}{12}$ = ___ = **O**

$\frac{6}{7}$ = ___ = **P**

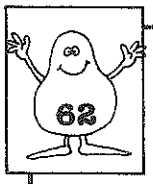
$\frac{5}{6}$ = ___ = **I**

$\frac{3}{8}$ = ___ = **T**

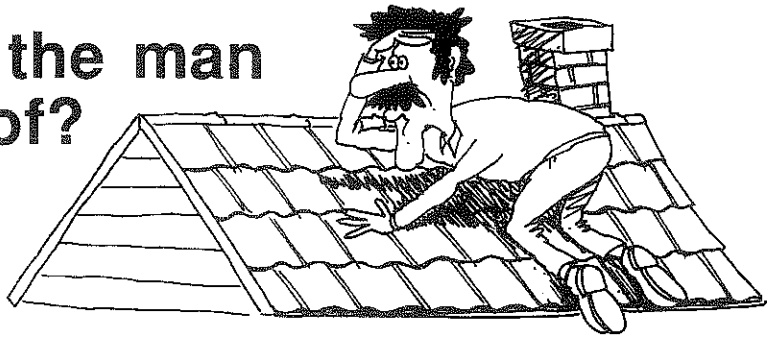
$\frac{4}{15}$ = ___ = **N**

$\frac{9}{20}$ = ___ = **T**

$\frac{1}{12}$ = ___ = **Y**



Why was the man on the roof?

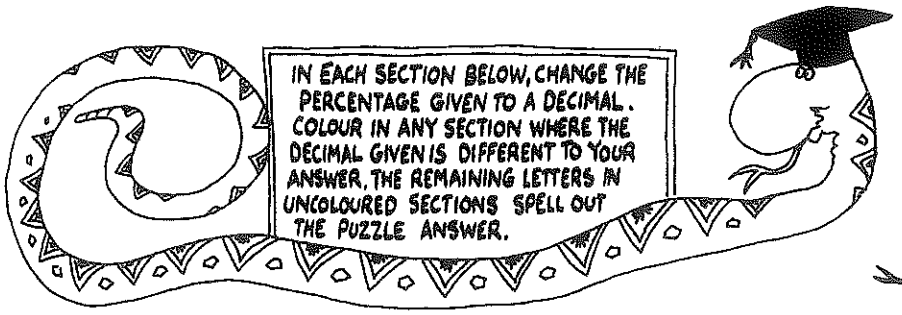


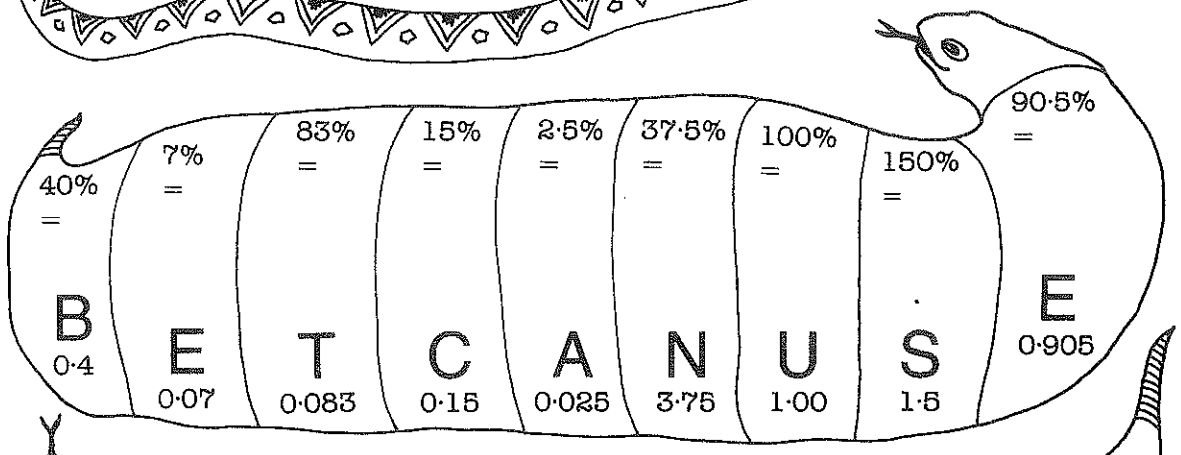
Express each of the decimals on the left as a percentage. Join the dot next to each decimal number to the dot next to the percentage answer on the right. Each line will pass through a letter and number, giving the puzzle code.

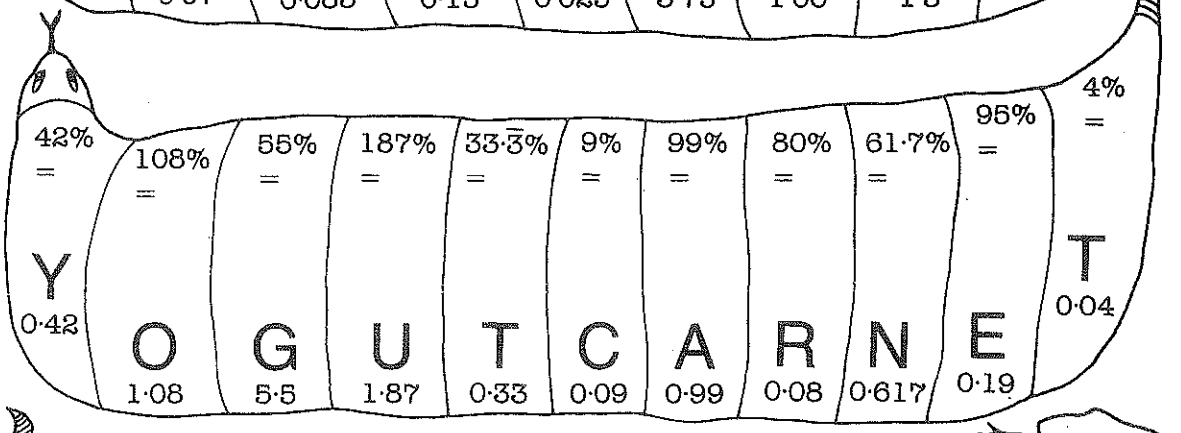
0·83 =	51%
0·51 =	365%
1·06 =	80%
3·42 =	342%
0·365 =	8%
5·1 =	106%
0·8 =	830%
0·16 =	510%
8·3 =	34·2%
0·342 =	83%
3·65 =	16%
0·08 =	50·1%
0·501 =	36·5%

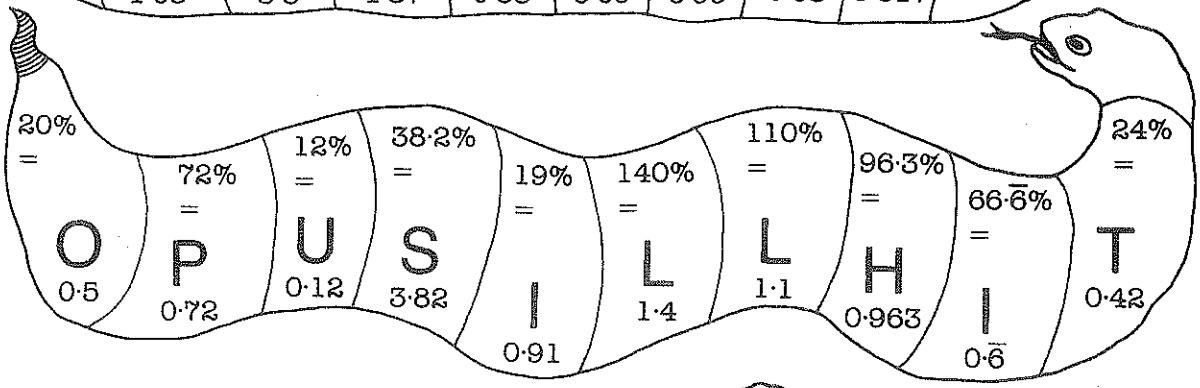
1	2	3	4	2	5	4	1	6	7	8	8	9	7	5	10	1
6	9	4	2	5	11	12	4	12	2	13	1	4				

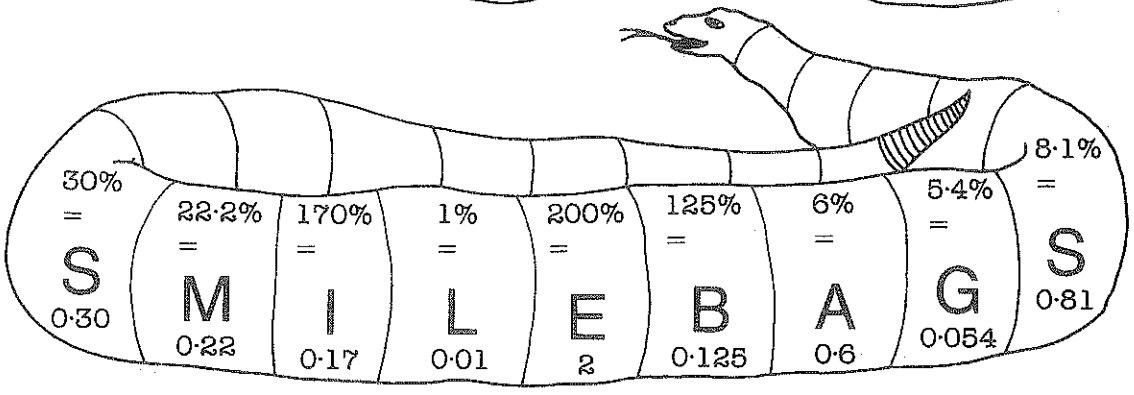
Why is a snake so smart?



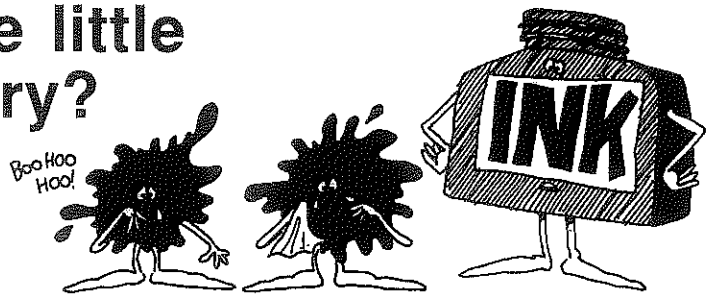




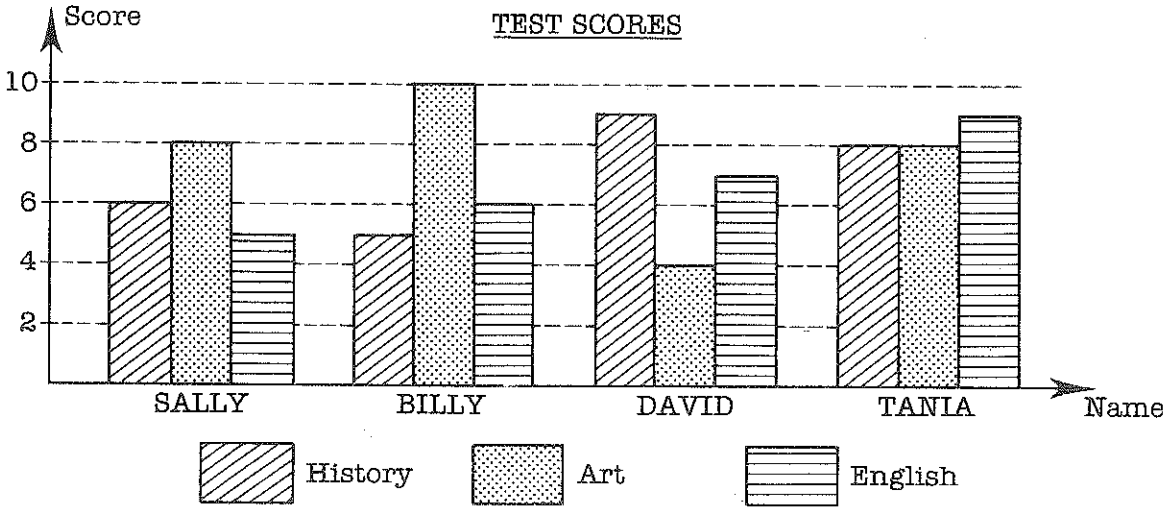




Why did the little ink-spots cry?



Answer the lettered questions about the column graph. Each letter and its answer gives the puzzle code.



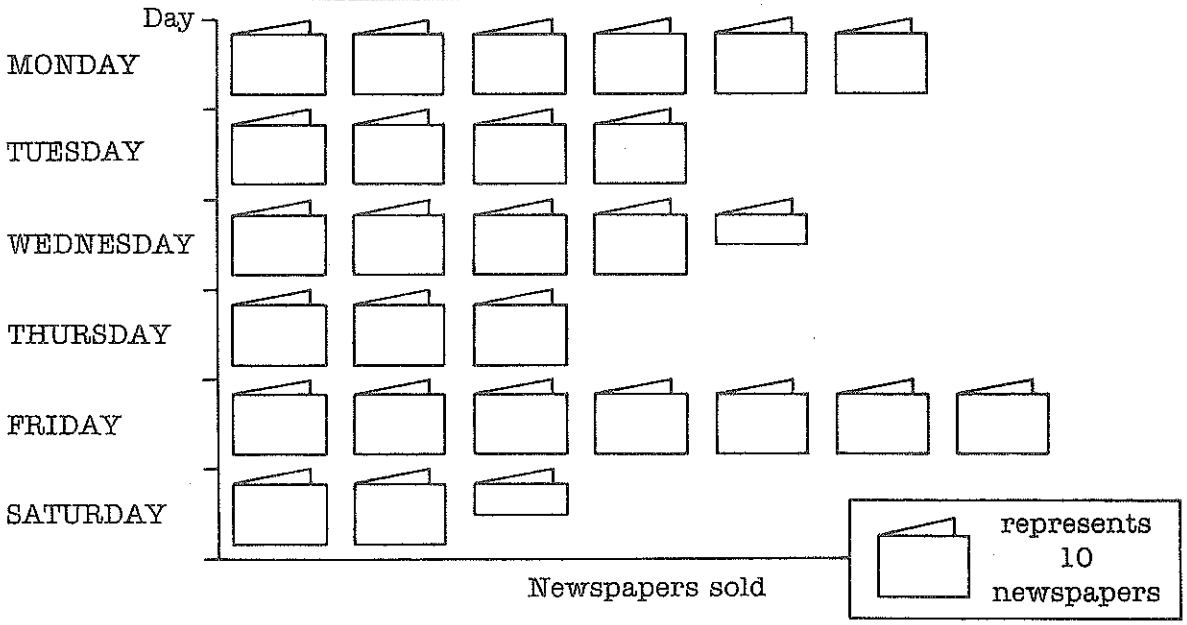
A	Billy's score in Art.	**M**	The English score for Billy.
C	Tania's total score for the three subjects.	**N**	The score that Tania received twice.
D	The English score for David.	**O**	David's two highest scores combined.
E	Sally's lowest score.	**P**	Sally's total score.
G	The highest English score.	**R**	The difference between the highest scores of Billy and Sally.
H	The total of the four Art scores.	**S**	How much above Sally's highest score is David's highest score?
I	David's worst score.	**T**	The difference between the English scores of Tania and Billy.
L	The sum of Sally's History and English scores.	**W**	David's total score.

	3	30	5	4	2	6	16	3	30	5	2	20	10	1
4	8	3	30	5	19	5	8	7	16	4	8	9		
10	11	16	8	9	1	5	8	3	5	8	25	5		

Did you hear about the man who put his car in for a service?

ANSWER THE LETTERED QUESTIONS ABOUT THE PICTURE GRAPH. THE LETTER AND IT'S ANSWER GIVES THE PUZZLE ANSWER CODE

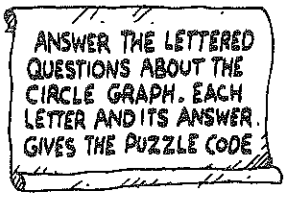
JOHN'S ROADSIDE NEWSPAPER SALES



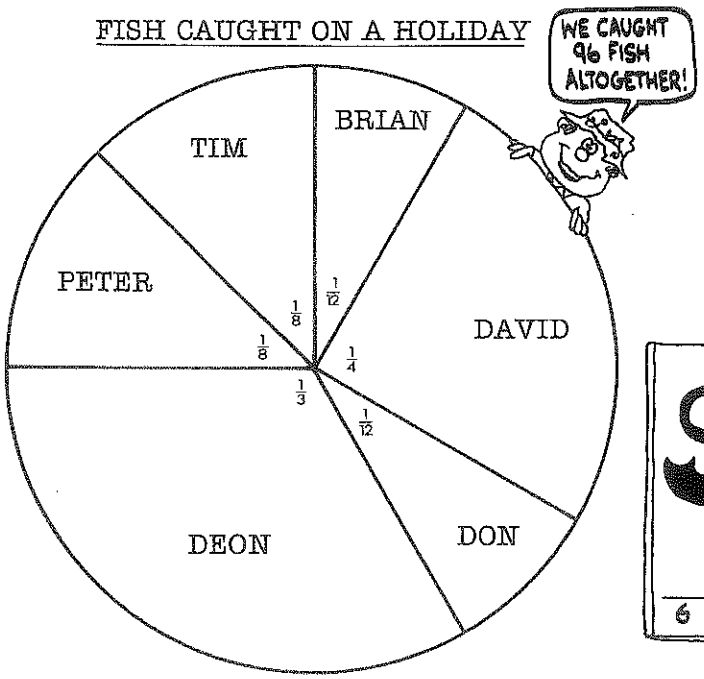
c	The number of papers John sold on Wednesday.	**n**	The total newspaper sales for the whole week.
d	The difference in the paper sales on Monday and Tuesday.	**o**	How many papers were sold on Friday and Saturday?
e	The total sales for the first 3 days.	**r**	The difference between sales on Monday and Thursday.
g	The number of sales represented by	**s**	Total sales for the week days.
h	How many papers were sold on Saturday?	**t**	The sales for the first day of the week.
i	The greatest number of sales on any one day.	**u**	Twice the number of papers sold on Tuesday.
k	How many more papers were sold on Monday than Saturday?		

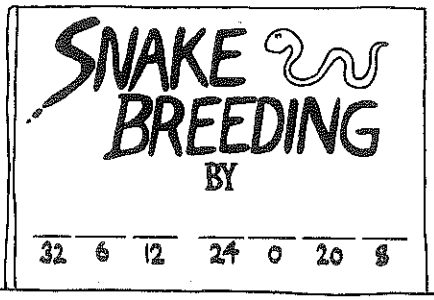
25	145	5	95	60	70	60	245	60	80	45	35	70	270
60	25	145	45	25	80	30	45	25	20	95	95	30	245

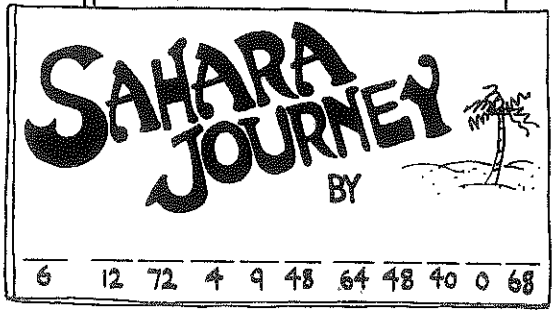
Famous writers



FISH CAUGHT ON A HOLIDAY

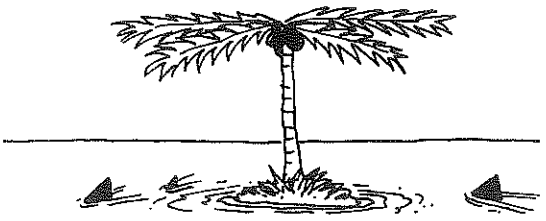






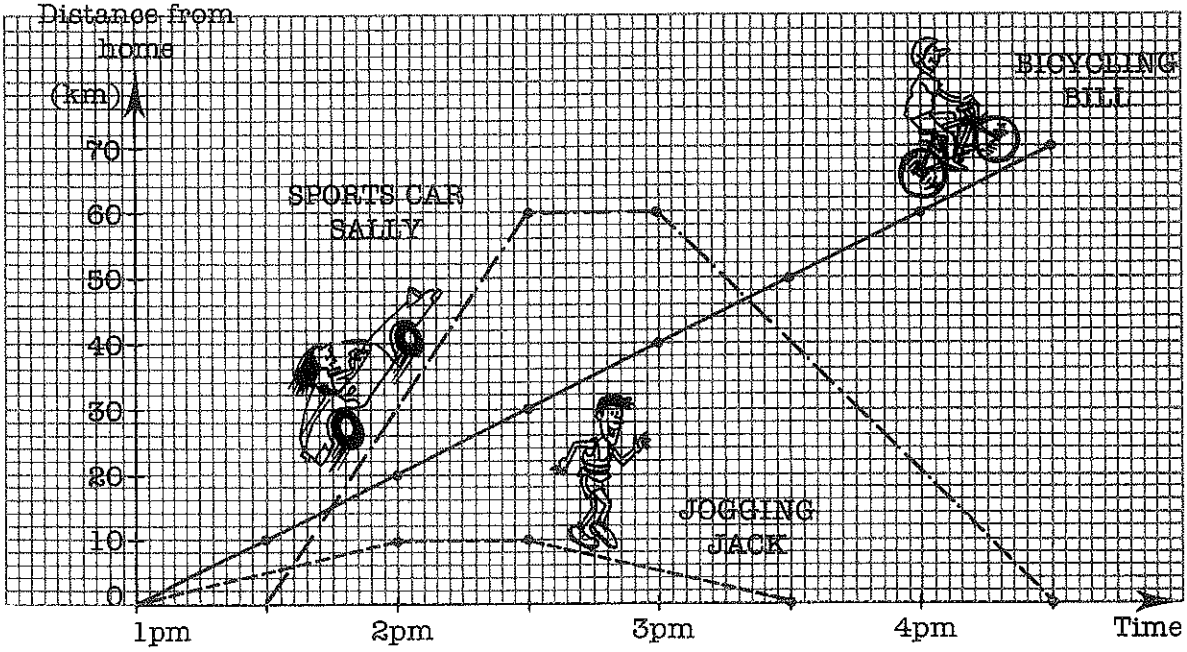
T	The number of fish caught by Brian.	**L**	The 3 youngest boys were David, Peter and Deon. How many fish did they catch?
S	How many fish were caught by the 'top' fisherman?	**I**	Tim gave half his fish to his girlfriend. How many did he give her?
R	Tim and Peter caught the same number of fish. How many was this?	**H**	All but David's fish are frozen for later use. How many were frozen?
P	This number was David's catch.	**E**	Brian, Don and Deon were competing against the others. How many more than the others did they catch?
O	How many more fish did Tim catch than Don?	**D**	$\frac{3}{4}$ of Peter's fish were salmon. How many salmon did he catch?
N	Peter and Deon were having a competition. By how many fish did Deon win?	**C**	Excluding Deon's catch, how many fish were caught?
M	Brian and Deon gave their fish away at a caravan park. How many did they give away?	**A**	Half of the fish caught were salmon. What was this number?

Why is an island like a 'T'?



Use the 'travel' graph to answer the lettered questions. Each letter and its answer gives the puzzle code.

HOW FAR FROM HOME
THE FAMILY MEMBERS WERE ON SATURDAY

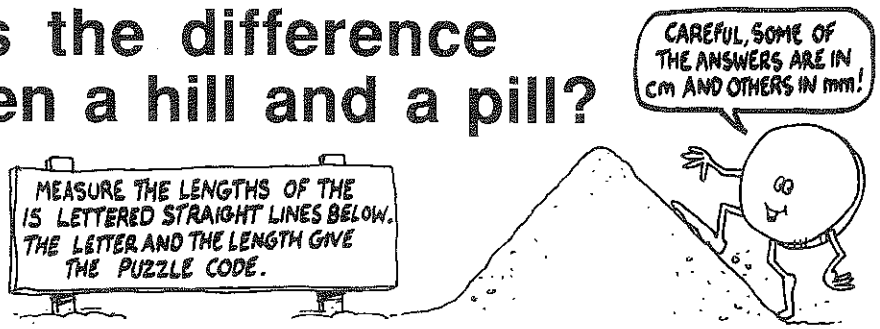


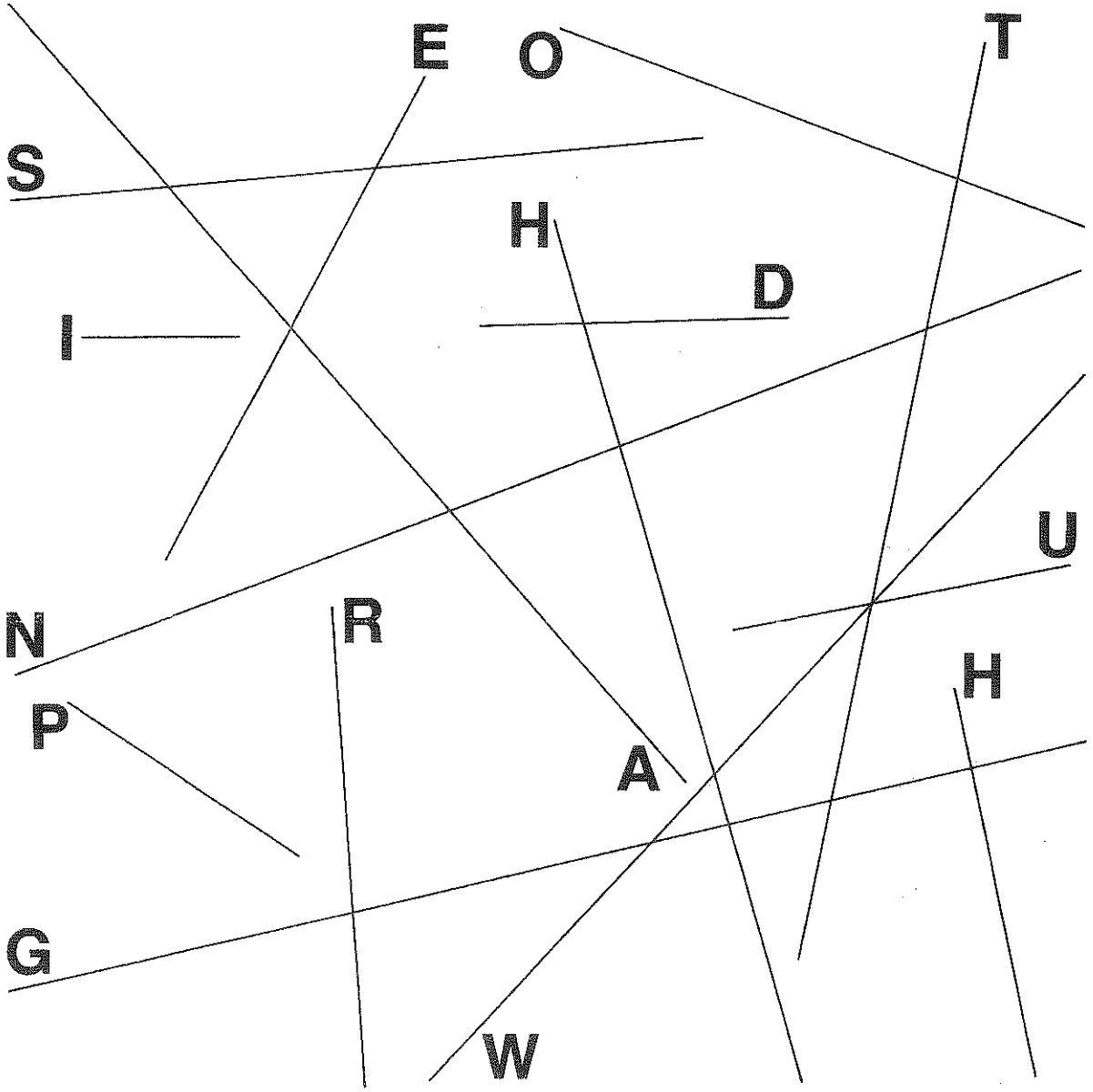
a	What is Bill's speed in km/hr?	h	At what time did Sally start to drive home?	o	When did Sally leave home?
b	At what time did Jack stop jogging away from home?	i	How many km did Sally drive during the afternoon?	r	At what speed was Sally driving home (in km/hr)?
d	How many km from home was Bill at 4:30 pm?	l	How far from home was Bill at 2:30 pm (in km)?	t	How many km from home was Sally at 2:15 pm?
e	In travelling away from home, how fast was Sally going in km/hr?	m	At what time did Sally pass Bill?	w	How many km apart are Jack and Bill at 3 pm?
f	How far from home (in km) did Jack jog?	n	When did Jack arrive home?	y	How many km from home was Bill at 4:15 pm?

45	3 pm	60	65	20	40	60	2 pm	1:30 pm	45	3 pm	120	3:30 pm

45	3 pm	60	1:45 pm	120	70	70	30	60	1:30 pm	10	35	20	45	60	40

What's the difference between a hill and a pill?





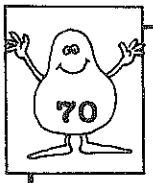
81 mm	165 mm	8 cm	23 mm	101 mm	13 cm	15 cm	7 cm	45 mm
136 mm	81 mm	16 cm	8 cm	136 mm	50 mm	4 cm	136 mm	58 mm	8 cm
81 mm	136 mm	13 cm	8 cm	7 cm	23 mm	101 mm	13 cm	15 cm	7 cm
45 mm	136 mm	81 mm	16 cm	8 cm	136 mm	45 mm	81 mm	14 cm	165 mm

Tell me about the great chemists of the seventeenth century

Find the sum of the lengths in each question on the left. Join the dot next to the question to the dot next to the correct answer on the right. Each line will pass through a letter and number giving the puzzle code.

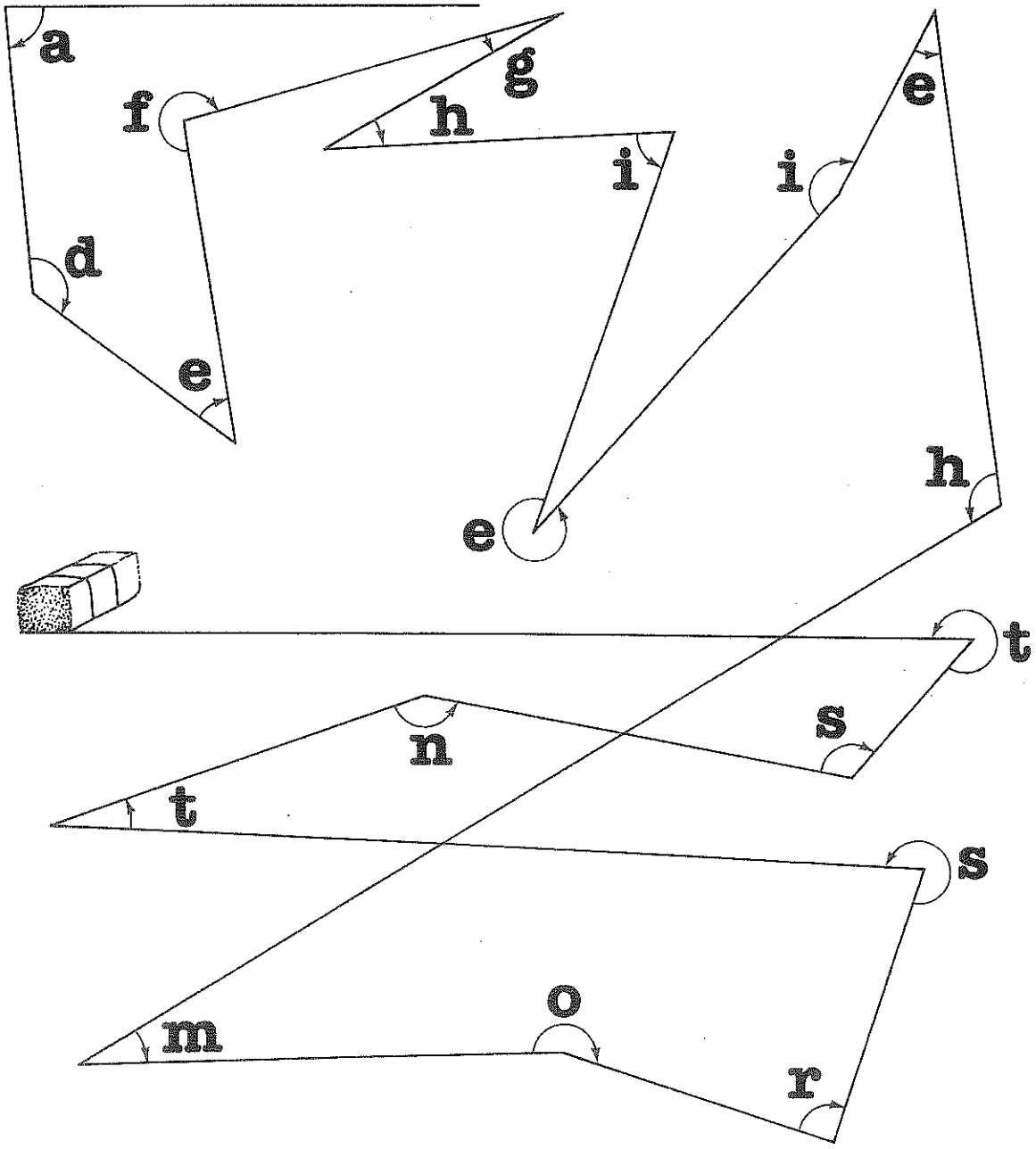
16 m 50 cm + 7 m 83 cm		2	11 m 54 cm
3 m 54 cm 5 m 17 cm + 2 m 83 cm	R	H	1 m 58 cm
75 cm 8 mm + 21 cm 5 mm	6	4	13 m
93 cm 7 mm 64 cm 3 mm	Y	T	8 m 38 cm 1 mm
2 m 18 cm 4 mm 5 m 63 cm 7 mm + 9 m 52 cm 8 mm	5	8	24 m 33 cm
3 m 52 cm 5 mm + 4 m 85 cm 6 mm	3	E	17 m 34 cm 9 mm
17 m 87 cm 2 mm + 54 m 12 cm 9 mm	D	A	97 cm 3 mm
7 m 72 cm 4 mm + 5 m 27 cm 6 mm	1	L	72 m 1 mm
	7		

1	2	3	4	5	6	3
5	7	7	8	3	5	8



Why did the jockey take hay to his bed?

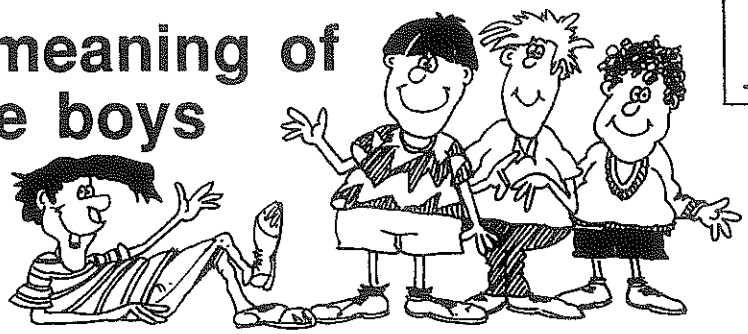
Measure the lettered angles below. Each angle and its letter gives the puzzle code.



22°	199°	263°	44°	35°	133°	114°	68°	285°

150°	166°	14°	27°	310°	30°	85°	90°	338°	120°

What is the meaning of each of these boys names?



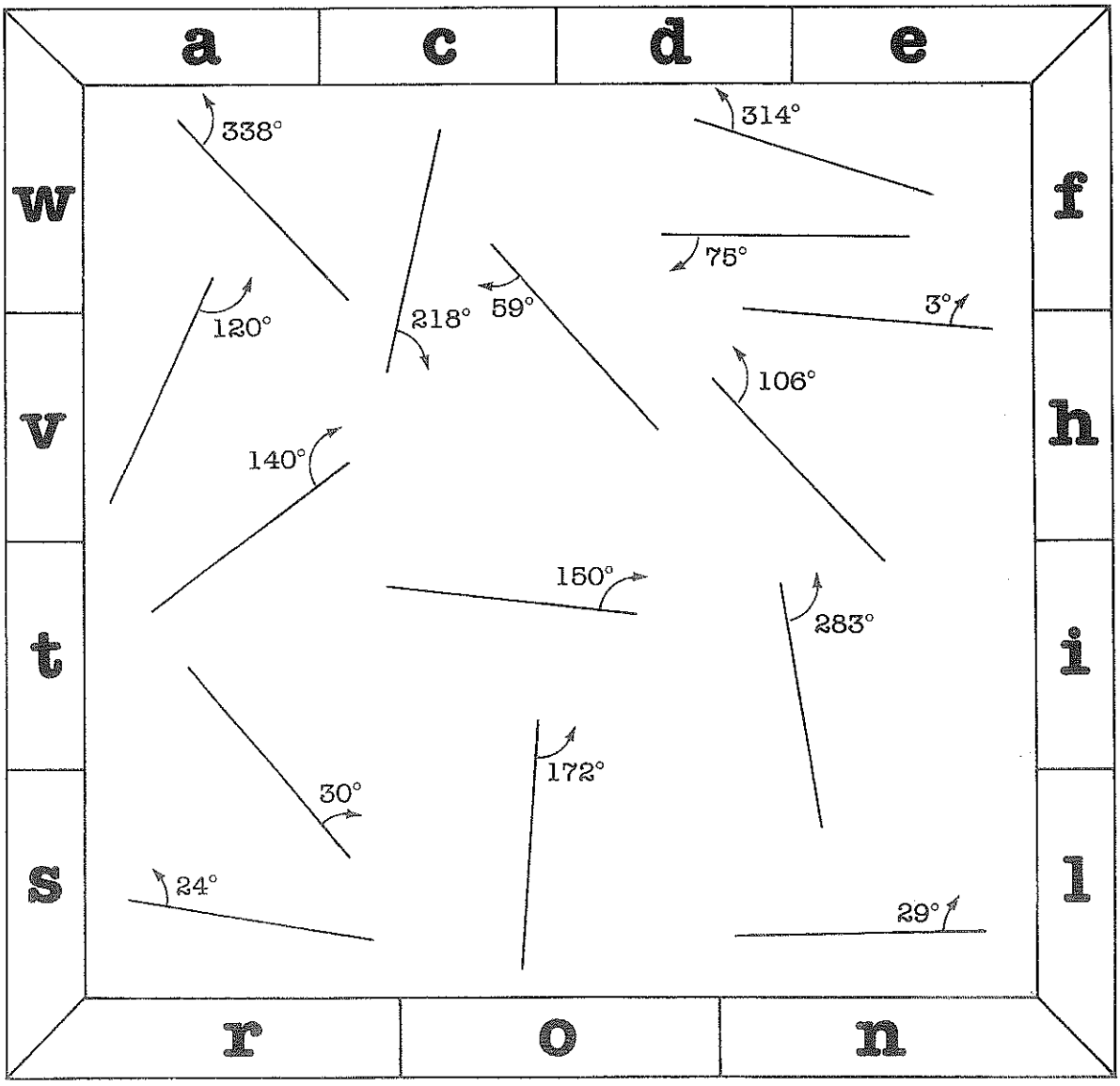
On each of the lines drawn, mark in the angle indicated using a protractor. Extend the lines you draw, so that they pass through one of the lettered sections around the page. Each angle and the letter it passes through gives the puzzle code.

Colin				
172°	338°	29°	106°	

Tom				
30°	218°	3°	24°	75°

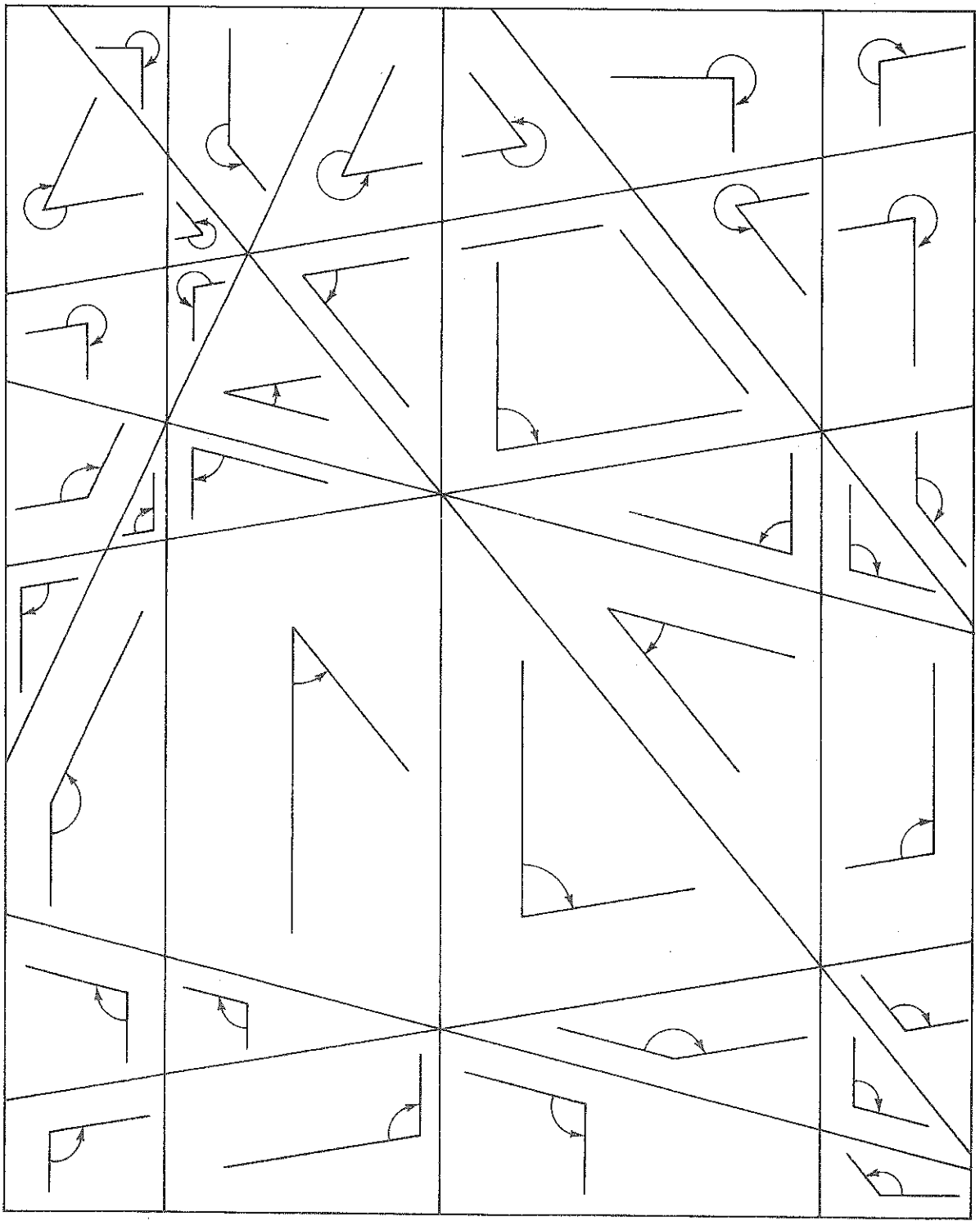
Greg					
120°	24°	106°	59°	140°	106°

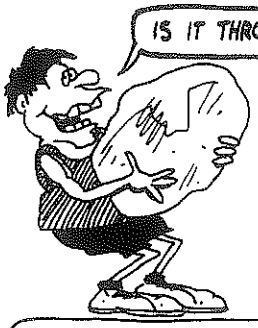
Philip												
314°	338°	29°	106°	59°	338°	120°	150°	338°	59°	283°	106°	283°



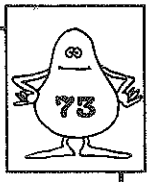
A common everyday object

In the picture below, colour in the regions in the following manner:
ACUTE ANGLES — Orange; OBTUSE ANGLES – Green; REFLEX ANGLES — Blue.

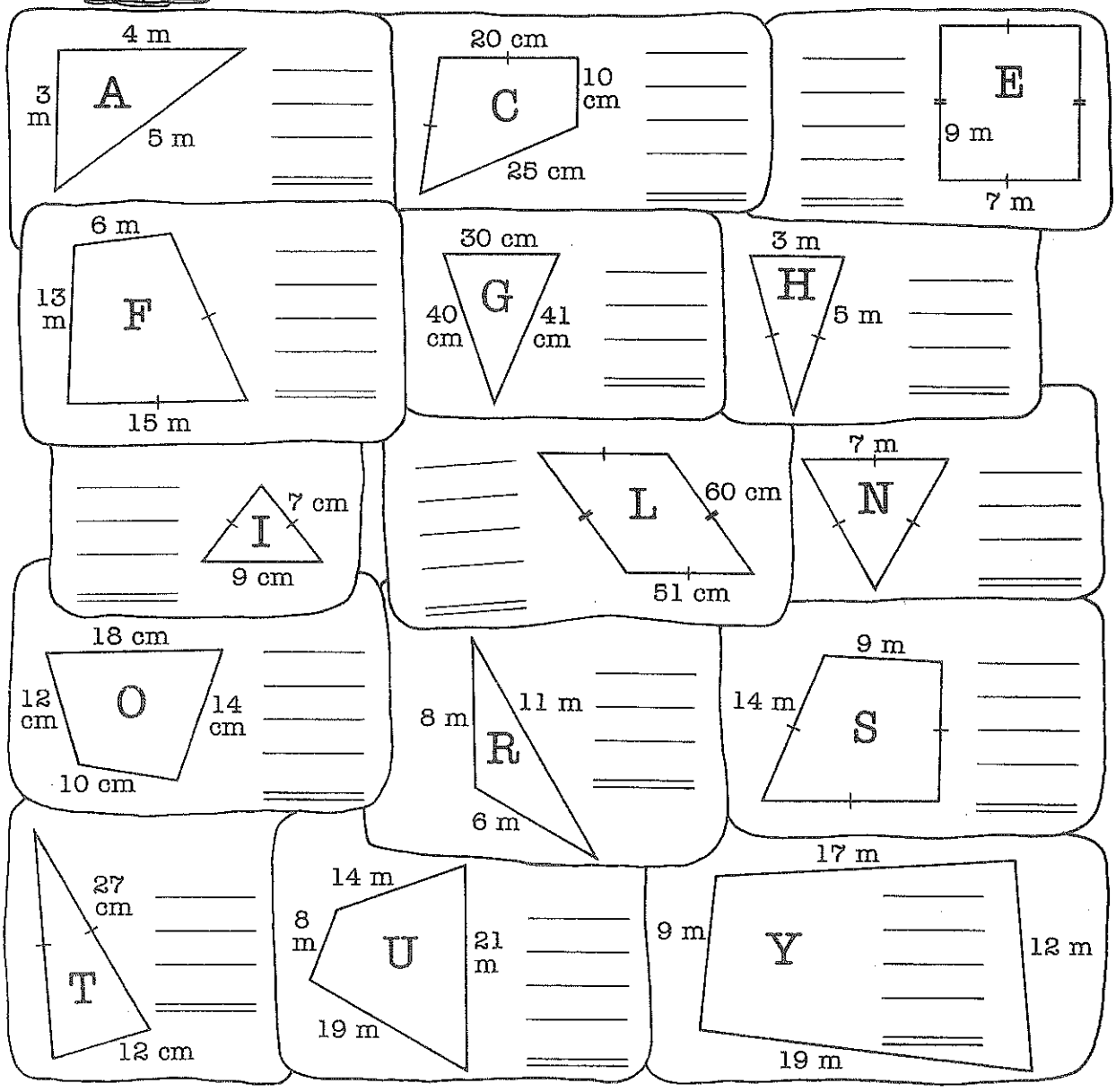




What is hurling?



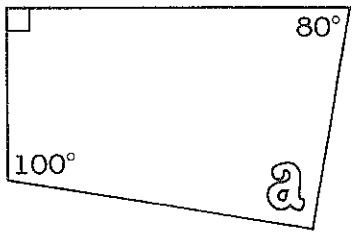
Determine the perimeter of each figure below. The perimeter and the letter inside each figure gives the puzzle code.

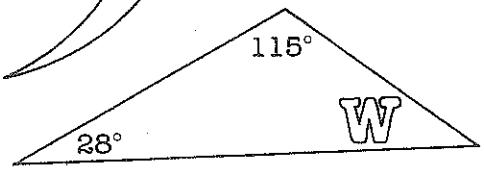


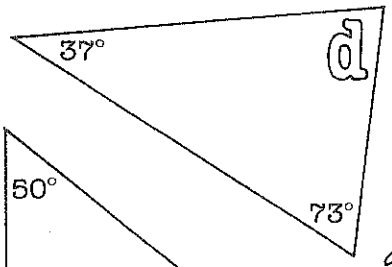
66 cm	13 m	32 m	21 m	12 m	66 cm	23 cm	54 cm	21 m	12 m	222 cm	111 cm	12 m
M	32 m	54 cm	49 m	23 cm	25 m	32 m	222 cm	12 m	21 m	D	66 cm	13 m
12 m	66 cm	23 cm	51 m	12 m	M	23 cm	X	66 cm	62 m	25 m	32 m	54 cm
49 m	25 m	62 m	111 cm	B	57 m	13 m	54 cm	75 cm	K	32 m	57 m	12 m
21 m	D	222 cm	12m	75 cm	25 m	54 cm	51 m	51 m	32 m			

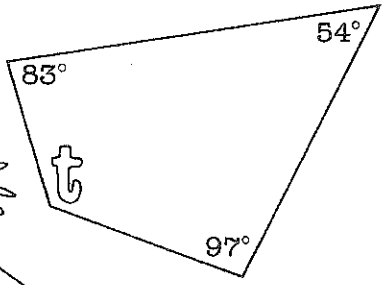
What has a ball got to do with a prince?

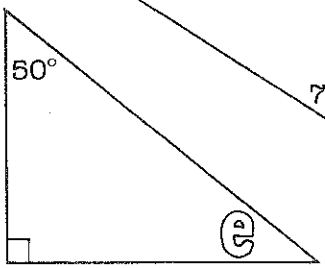
Calculate the size of the lettered angles in the triangles and quadrilaterals given. The angle and letter give the puzzle code.

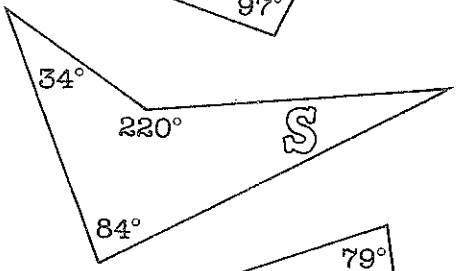


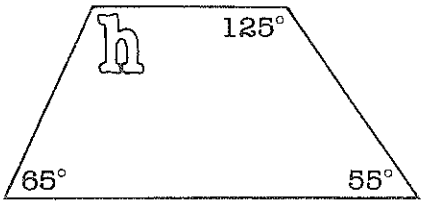


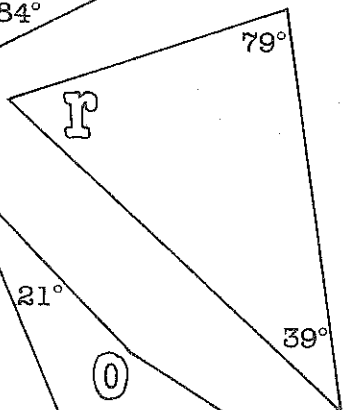


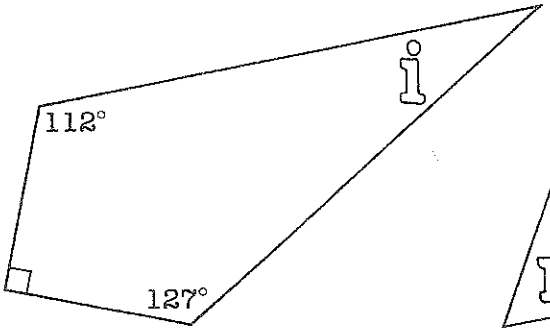


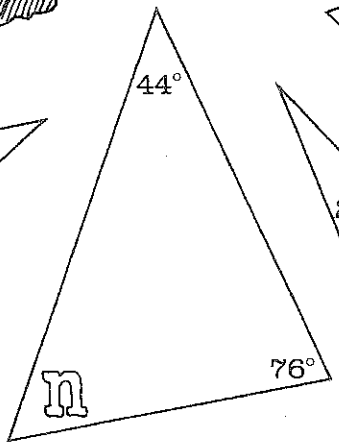








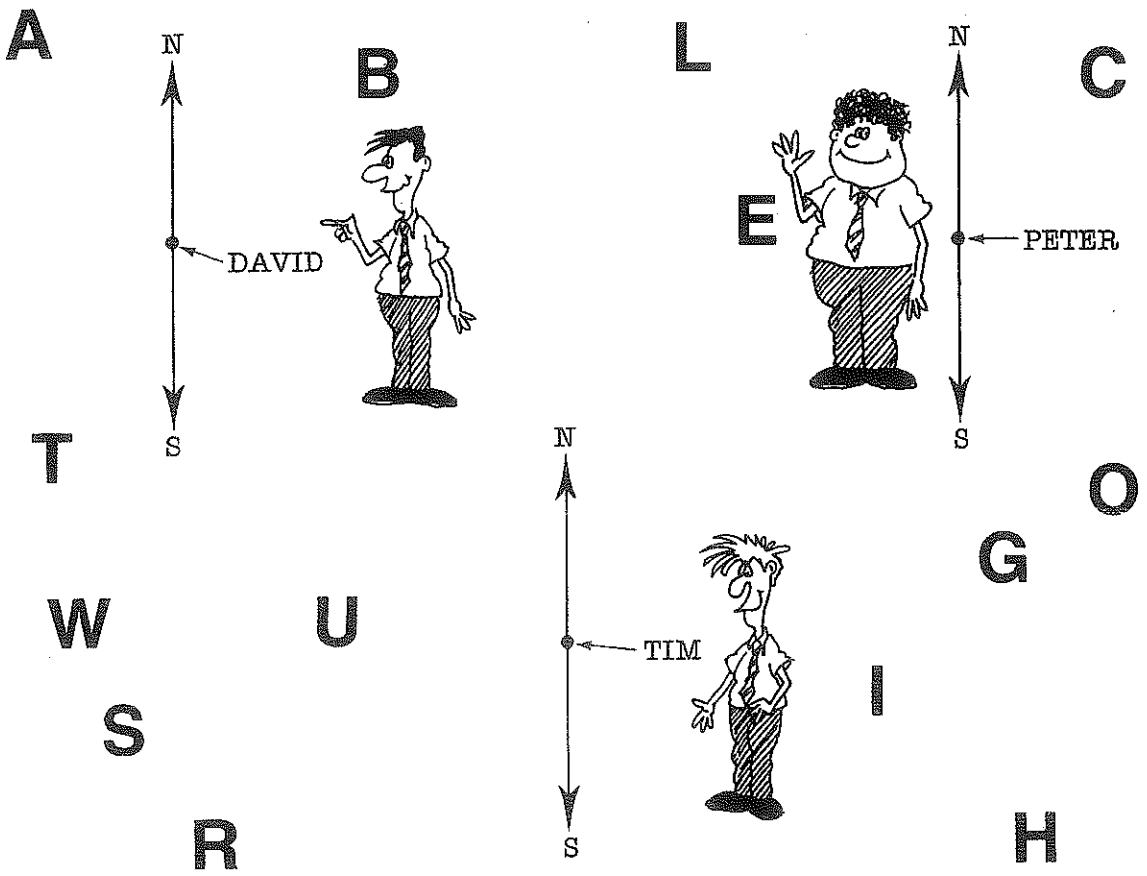




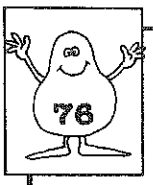
194°	60°	40°	31°	22°	115°	40°	31°	62°	126°	194°	126°	115°	40°
126°	115°	62°	194°	60°	40°	90°	60°	70°	126°	115°	40°	194°	126°	115°	40°	62°
31°	22°	126°	115°	62°	194°	37°	60°	31°	60°	126°	194°	126°	115°	40°	90°	31°	62°

Why did the teacher wear dark glasses?

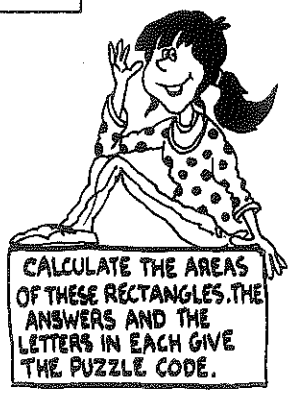
Draw in the bearings indicated in the blocks at the bottom of the page. Each line will pass through a letter giving the puzzle code for that block.



N 50°E of David	N 85°W of Peter	N 80°E of David	N 35°W of David	S 23°E of David	S 79°W of Tim	N 85°W of Peter
S 66°E of Tim	N 85°W of Peter	S 50°W of Peter	N 80°E of David	N 12°E of Tim	N 35°W of David	S 79°W of Tim	S 79°W of Tim
S 14°W of David	N 35°W of David	S 79°W of Tim	S 79°W of Tim	S 30°E of Peter		
N 50°E of David	S 50°W of Peter	S 10°W of Peter	N 80°E of Tim	S 66°E of Tim	N 70°W of Tim	



How were your exam questions?



5 m, 3 m — **s** — Area = L × W = _____ = _____

8 m, 2 m — **y**

4 m, 6 m — **h**

6 m, 5 m — **e**

6 m, 3 m — **o**

2 m, 16 m — **r**

7 m, 6 m — **a**

5 m, 9 m — **t**

4 m, 5 m — **d**

7 m — **w**

b — 3 m, 7 m

9 m, 3 m — **n**

9 m, 4 m — **i**

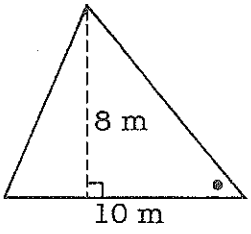
l — 7 m, 11 m

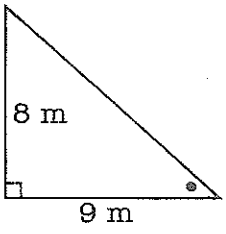
u — 8 m

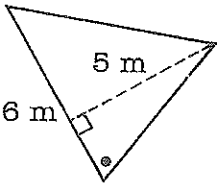
45 m²	24 m²	30 m²	16 m²	49 m²	30 m²	32 m²	30 m²
30 m²	42 m²	15 m²	16 m²	21 m²	64 m²	45 m²	36 m²
24 m²	42 m²	20 m²	45 m²	32 m²	18 m²	64 m²	21 m²	77 m²	30 m²
49 m²	36 m²	45 m²	24 m²	45 m²	24 m²	30 m²			
42 m²	27 m²	15 m²	49 m²	30 m²	32 m²	15 m²			

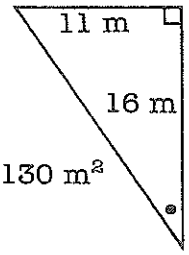
How is a rifle like a lazy worker?

Calculate the **area** of each triangle.
Join the dot inside each to the dot next to the answer found around the page.
Each line will pass through a number and letter giving the puzzle code.









• 130 m²

• 65 m²

• 28 m²

O

8

5

7

9

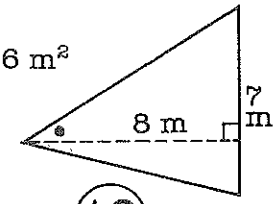
T

N

C

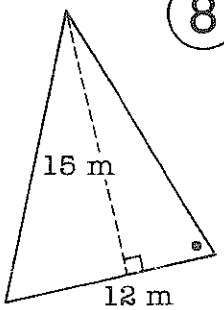
• 36 m²

• 66 m²



B

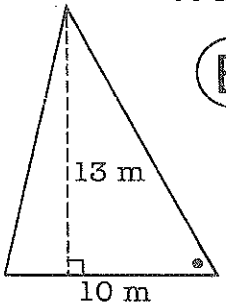
13



E

12

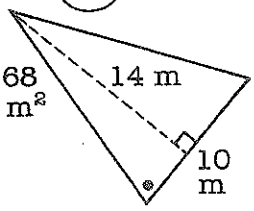
• 60 m²



1

4

3

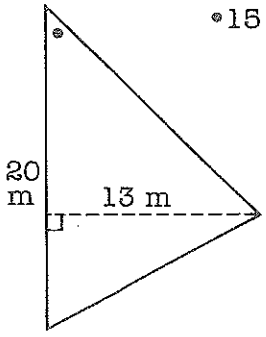


• 15 m²

11

I

10



• 9 m²

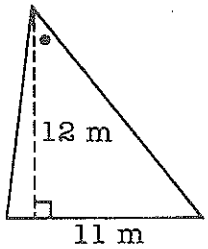
• 90 m²

A

Y

2

R



H

D

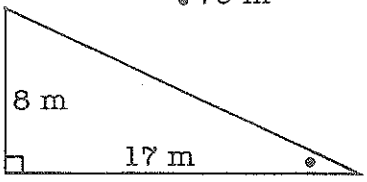
6

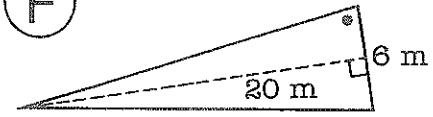
• 88 m²

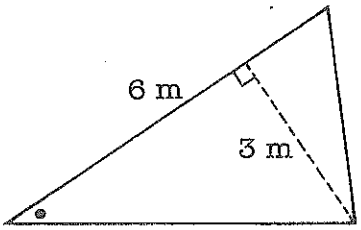
• 70 m²

• 40 m²

F

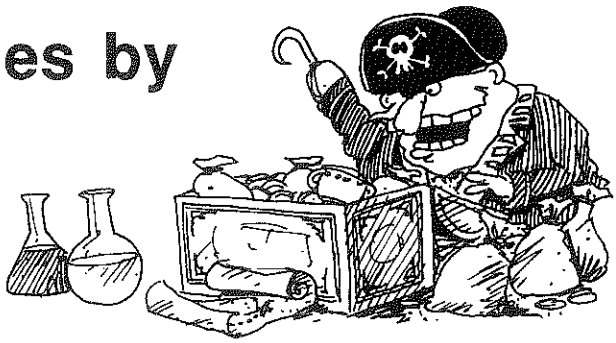






1	2	3	4	5	6	7	8	9	1	2	8	3	10	11	12	3	13

3 famous stories by Robert Louis Stevenson

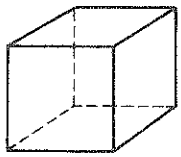


Determine the number of **faces, edges** and **vertices** in the solids shown. The number and letter with each gives the puzzle code.

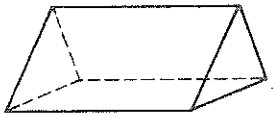
8	12	6	6	4	15	4	4	12	8	8	6	12	5	15	8	6
vert.	vert.	vert.	fac.	fac.	edg.	vert.	vert.	edg.	fac.	vert.	edg.	vert.	fac.	edg.	vert.	fac.

7	12	6	12	10	10	12	6	9	10	4	12	8	8	
fac.	vert.	fac.	edg.	edg.	vert.	vert.	fac.	edg.	edg.	vert.	edg.	fac.	vert.	

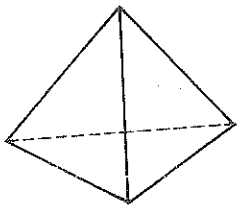
4	9	8	8	12	18	18	6	8
faces	edg.	vert.	fac.	edg.	edg.	edg.	fac.	vert.



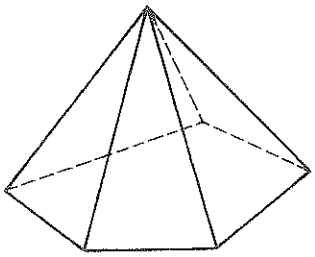
edges = a
vertices = d
faces = e



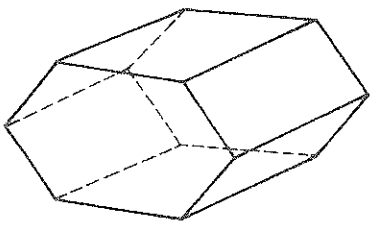
faces = h
edges = i
vertices = j



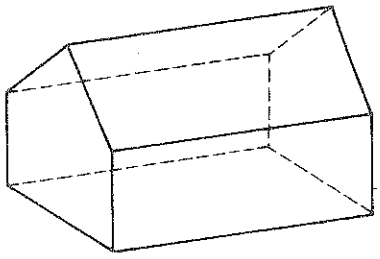
faces = k
vertices = l
edges = m



edges = s



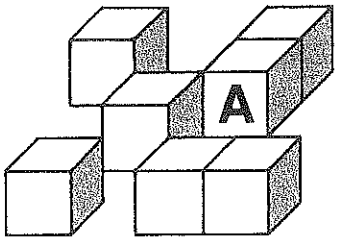
faces = n
edges = p
vertices = r

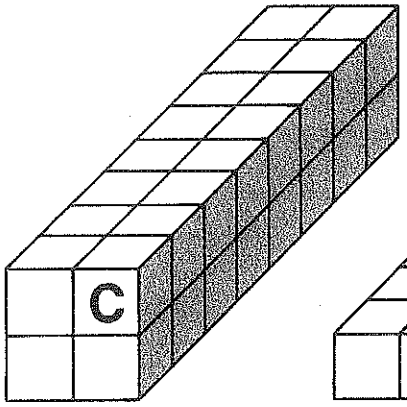


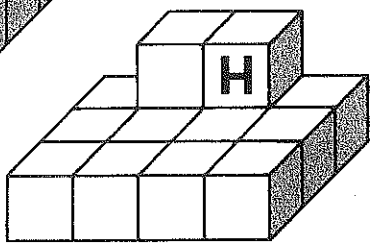
faces = t
vertices = u
edges = y

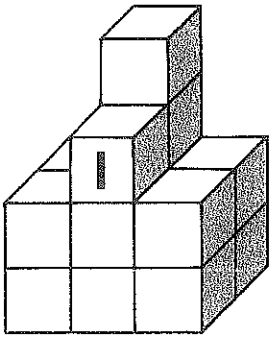
What is a volcano?

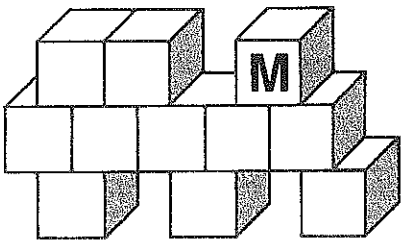
Each cube shown below represents 1 cm^3. Find how many cm^3 there are in each solid shown. The answer and each letter give the puzzle code.

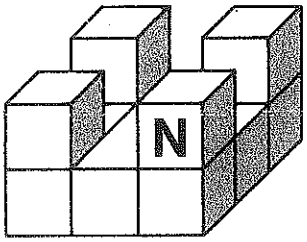


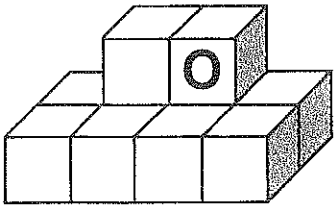


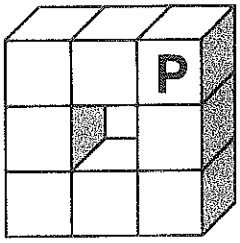


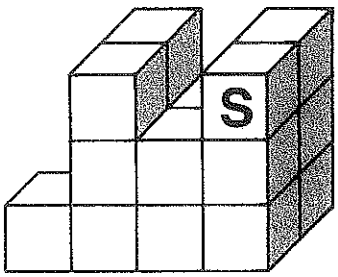


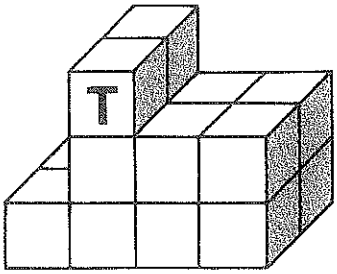


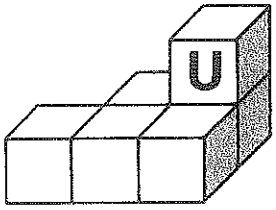


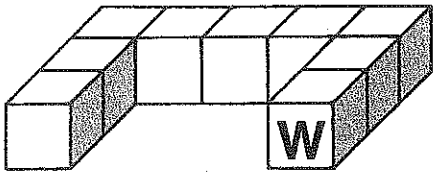












7 cm^3	11 cm^3	10 cm^3	6 cm^3	13 cm^3	16 cm^3	7 cm^3	15 cm^3	13 cm^3

9 cm^3	15 cm^3	16 cm^3	14 cm^3	14 cm^3	15 cm^3	32 cm^3	32 cm^3	6 cm^3	8 cm^3	17 cm^3

The police are looking for a man with one eye called Murphy!

Simplify the expressions by adding or subtracting **like** terms. The answer and letter circled beside the expression gives the puzzle code.

A	$5e + 2e =$	A	$12p - 7p =$
C	$3x + 5x + 7x =$	D	$20a - 6a - 7a =$
E	$8e + 12e - 9e =$	E	$2p + 8p - p =$
E	$6x - 3x + 9x =$	E	$2a + 3a - 4a =$
H	$a + 2a + a + 4a =$	H	$10p + 7p - 3p =$
H	$5ae + 2ae =$	I	$13px - 11px =$
L	$e + 9e - 5e =$	L	$7x + 2x - 9x =$
O	$px + 2px + 3px =$	R	$23a - 15a - 2a =$
S	$10ae - 7ae + ae =$	S	$2e + 3e + 4e - 5e =$
T	$17p + 18p - 13p =$	T	$19x - 7x + 5x =$
W	$9ae + 6ae - 7ae =$	Y	$12px + 13px =$

8ae		14p		5p		22p	4ae		8a		2px		4e	
6px	17x	7ae	11e	6a	9p	25px	a	15x	7e	0	5e	12x	7a	?

Who was the fastest runner in history?

Remove the '×' signs and simplify the expressions given. Join the dots next to the expressions and the answers on the right of the page. Each line will pass through a letter and number giving the puzzle code.

$2 \times a \times e =$	10e
$3 \times m \times 2 =$	12ae
$2 \times a + 3 \times a =$	6m
$e \times 5 \times 2 =$	8mn
$a \times 3 \times e \times 2 =$	9a
$4 \times m \times 2 \times n =$	28m
$10 \times m - 3 \times 2 \times m =$	5a
$2 \times e \times 5 \times 3 =$	6mn
$7 \times a \times 2 - 5 \times a =$	4m
$3 \times e \times 4 \times a =$	2ae
$1{\cdot}5 \times e \times 4 =$	15a
$3 \times n \times 2 \times m =$	30e
$4 \times 7 \times m \times 1 =$	6e
$3 \times a \times 9 - 6 \times 2 \times a =$	6ae

I F M 3 9 A N 6 W 12 U 14 1 13 10 11 T 8 C D E 2 5 4 R S H 7

1	2	1	3	4	5	6	1	7	8	4	5	9	10	11	7	8
10	12	8	4	5	4	13	3	1	12	11	1	14	5			

Order in the court!
Order in the court!

Calculate the value of each expression. The value and the letter next to the expression give the puzzle answer code.

SUBSTITUTION VALUES
$a = 5, b = 2, x = 4, y = 10$

A	$3a =$	$\frac{2y}{x} =$	K
C	$4b - 2 =$	$(a + b)^2 =$	L
D	$xy - 6a =$	$31 - bx =$	N
E	$x^2 =$	$by - ax =$	O
F	$abx =$	$abx \div y =$	P
H	$\frac{y}{a} =$	$b(a + x) =$	S
I	$5b + 4a =$	$b^3 =$	V

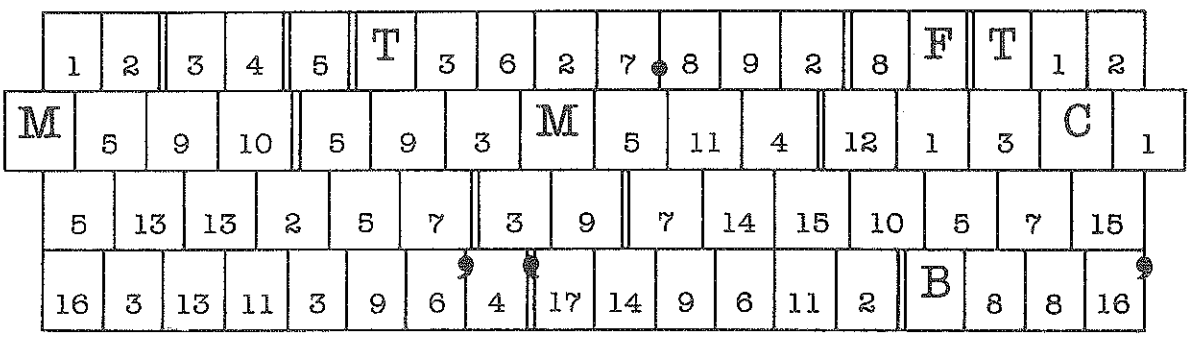
0	5	30	49	49	2	15	8	16	40	30	18	2

15	23	10	6	2	30	4	18	4	49	16	15	18	16

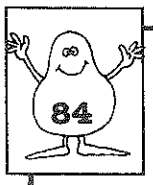
Who is SHERE-KHAN?

Simplify the expressions given on the left, leaving your answer in power form. Join the dot next to each question to the dot next to its answer on the right. The lines will give the puzzle code.

$a \times a \times a \times a \times a =$	c^{10}
$b^2 \times b^3 =$	b^5
$c^5 \div c^3 =$	c^{12}
$e \times e^3 \times e^2 =$	e^4
$a^6 \div a^4 =$	$c^{13}e^9$
$b^{10} \div b^3 =$	e^6
$c \times c^7 \times c^2 =$	$2b^6$
$e^{15} \div e^{11} =$	a^5
$2a^3 \times 3a^2 =$	$6a^5$
$10b^8 \div 5b^2 =$	a^9b^2
$c^3 \times e^2 \times c^5 \times e^2 =$	a^2
$abaabbb =$	c^4e^{10}
$a^7b^6 \times a^2 \div b^4 =$	c^8e^4
$ce^9 \times c^3e =$	c^2
$c^8 \times c^{17} \div c^{13} =$	e^{14}
$e^7 \times e^6 \times e =$	a^3b^4
$c^7e^5 \times c^6e^4 =$	b^7



1	2	3	4	5	T	3	6	2	7	8	9	2	8	F	T	1	2	
M	5	9	10	5	9	3	M	5	11	4	12	1	3	C	1			
5	13	13	2	5	7	3	9	7	14	15	10	5	7	15				
16	3	13	11	3	9	6	4	17	14	9	6	11	2	B	8	8	16	

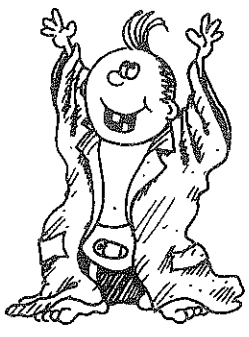


Why do mothers dress baby girls in pink and baby boys in blue?

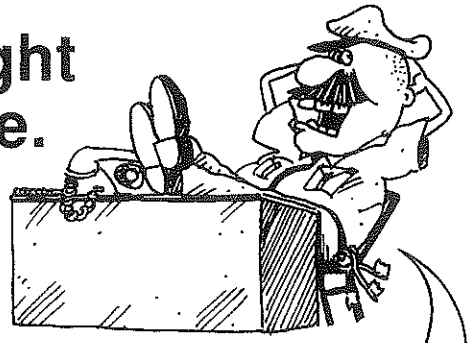
Simplify the expressions given by expanding brackets. The answer and the letter beside each give the puzzle answer code.

$2(x + y) =$	**A**		**B**	$3(y - z) =$	
$2(x + 2z) =$	**C**		**D**	$5(y - 3x) =$	
$4(2x - y) =$	**E**		**H**	$7(3y + z) =$	
$3(x + 7y) =$	**I**		**L**	$4(x + 3z) =$	
$2(y - z) =$	**M**		**N**	$7(x - y) =$	
$5(2x - 3y) =$	**R**		**S**	$2(x - y) =$	
$3(x - 4y) =$	**T**		**V**	$4(y + z) =$	

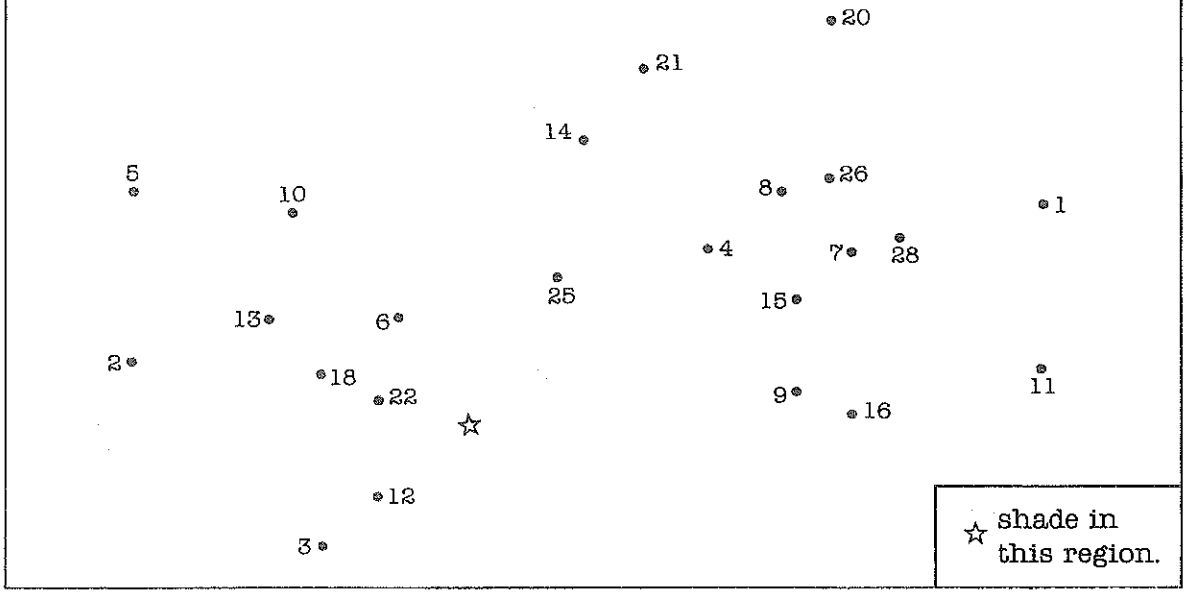
$3y - 3z$	$2x + 2y$	$3y - 3z$	$3x + 21y$	$8x - 4y$	$2x - 2y$
$2x + 4z$	$2x + 2y$	$7x - 7y$	$3x - 12y$	$5y - 15x$	$10x - 15y$
$8x - 4y$	$2x - 2y$	$2x - 2y$	$3x - 12y$	$21y + 7z$	$8x - 4y$
$2y - 2z$	$2x - 2y$	$8x - 4y$	$4x + 12z$	$4y + 4z$	$8x - 4y$	$2x - 2y$



I look after the bright sparks around here. Who am I?



Solve the one-step equations and join the dots next to the answers in the order given, in each block of equations.



$6a = 12, a =$
$b + 7 = 12, b =$
$c - 11 = 2, c =$
$d \div 2 = 1, d =$
$3e = 9, e =$
$f + 7 = 25, f =$
$g - 7 = 0, g =$
$\frac{h}{4} = 2, h =$
$4 + i = 30, i =$
$j - 10 = 18, j =$
$9k = 9, k =$
$L + 13 = 33, L =$
$M - 7 = 19, M =$

$n \times 7 = 63, n =$
$p + 8 = 23, p =$
$q - 13 = 9, q =$
$6r = 72, r =$
$S \div 3 = 3, S =$

$T + 15 = 23, T =$
$U - 19 = 2, U =$
$2V = 40, V =$

$W \times 2 = 56, W =$
$X + 5 = 12, X =$
$Y - 8 = 8, Y =$
$\frac{z}{3} = 1, z =$

$8A = 32, A =$
$B + 6 = 20, B =$
$C - 5 = 20, C =$
$D \div 5 = 2, D =$
$E + 7 = 13, E =$

$17F = 17, F =$
$G - 4 = 7, G =$
$2H = 32, H =$

$I - 5 = 16, I =$
$J + 49 = 54, J =$

$m + 7 = 20, m =$
$R - 17 = 1, R =$

Where would you come across spelunking?

THE 100m SPRINT TIMES FOR 64 ATHLETES ARE GIVEN BELOW. TAKEN IN GROUPS OF 4 WHAT WOULD THEIR RELAY (4x100m) TIMES BE? USE A CALCULATOR FOR YOUR ADDITIONS. THE LETTER NEXT TO EACH GROUP AND THEIR TIME GIVES THE PUZZLE CODE.

10·21 11·53 10·96 12·47 ____ **A**	11·6 11·84 11·07 12·24 ____ **C**	10·88 11·97 13·24 11·58 **V** ____	14·5 13·29 12·81 12·54 **E** ____
10·24 9·98 10·86 10·75 ____ **F**	11·54 12·27 12·14 12·93 ____ **G**	14·57 15·63 16·93 12·14 **H** ____	12·65 11·94 10·22 12·67 **I** ____
10·53 11·04 10·06 10·81 ____ **L**	13·27 12·81 13·93 10·54 ____ **M**	10·27 10·93 10·54 11·64 **N** ____	12·63 11·89 13·66 14·75 **O** ____
16·74 15·91 18·42 12·47 ____ **P**	12·05 13·23 12·87 11·42 ____ **R**	10·19 10·27 10·34 10·18 **S** ____	11·03 12·27 13·41 10·69 **T** ____

47·48	43·38	46·75	45·17	47·67	53·14	40·98	41·83	52·93	49·57	47·4	59·27
47·48	40·98	47·48	40·98	45·17	43·38	52·93	47·4	59·27	53·14	49·57	
43·38	45·17	50·55	53·14	41·83	52·93	49·57	46·75	45·17	47·67	47·48	43·38
48·88	46·75	52·93	50·55	47·48	43·38	48·88	41·83	49·57	52·93	50·55	
47·4	59·27	53·14	52·93	42·44	**D**	53·14	43·38	48·88	42·44	47·48	40·98
59·27	43·38	45·17	50·55	53·14	40·98	63·54	53·14	42·44	**U**	43·38	
K	50·55	53·14	45·17	43·38	47·48	43·38	48·88	46·75	45·17	47·67	53·14

What did the beaver say to the tree?

8·8376609 → square → X → ÷ 8·7 → E → ÷ 1·35 → V → ÷ 2·66 → H → ÷ 0·5 → T → × 0·5 → D → × 3·5 → O → × 1·22 → R → × 2·5 → A → 6 × 1·4

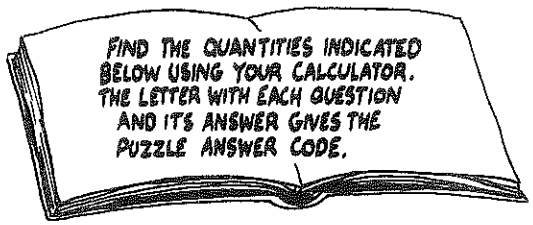
25·62	89·67	6·65	8·9775	5	89·67	5	2·5	8·9775	1·44	8·9775	78·10425	5
2	8·9775	5	5	8·9775	21	12	1·44	5	2·5	8·9775		
8·4	2	1·2	2·5	144	15·26	8·9775	5	15·26	8·9775	2	89·67	2·4

0·36 ÷ 0·3 → P → square → N → ÷ 0·6 → W → × 3·6 → F → ÷ 4·32 → L → × 7·63 → B → I → square root → A → +4·6 → Z → × 8·2 → S → 13·6 ÷ 0·8

2·5	17	6·65	139·4	21	25·62	2·5	15·26	44·835
8·64	25·62	139·4	6·65	2·5	25·62	8·64	78·10425	1·44	5

88

Funny authors



a	27% of $341 =	h	45% of 1400 m =
b	64% of 750 g =	i	36% of $127 =
c	75% of 632 m =	l	125% of 356 g =
d	55% of $160 =	m	300% of 37 m =
e	80% of 643·75 g =	n	8% of $860 =
		o	19% of 1200 g =
		r	87·5% of 536 m =
		t	28·2% of $140 =
		u	6·5% of 4000 g =

STOMACH PAINS
BY

111m 228g $68·80 $92·07 630m

445g 228g $39·48 $39·48

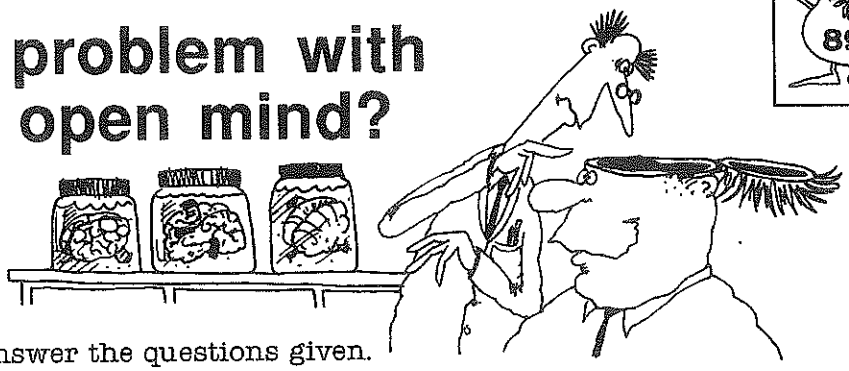
THE LION TAMER
BY

474m 445g $92·07 260g $88 515g 480g 228g $39·48 $39·48 228g 111m

The Cannibal Chief
BY

630m 515g $68·80 469m $45·72 515g $39·48 $39·48 $92·07 111m $92·07 $68·80

What's the problem with keeping an open mind?



Use your calculator to answer the questions given.
The letters next to some questions and their answers gives part of the puzzle code.
Where there is no letter given the last digit in your answer turned upside down (on your calculator display) gives a letter and this is coded with the number beside the question.

A $= (6{\cdot}3 + 5{\cdot}07) \times 8{\cdot}2$ = _____

3 $= [(0{\cdot}22 \div 0{\cdot}011 - 4{\cdot}16) \div 5{\cdot}28]^3$ = _____

1 $= 16 \times (453{\cdot}6 \div 6{\cdot}48 - 25{\cdot}125)$ = _____

F $= 18{\cdot}6 \div 0{\cdot}93 + 5{\cdot}7 \times 11$ = _____

C $= 700 \times 0{\cdot}035 \div 98$ = _____

Y $= \sqrt{2999 - 617{\cdot}56}$ = _____

R $= \sqrt{70 - 2{\cdot}9239}$ = _____

4 $= (0{\cdot}365 + 15{\cdot}635) \times 12{\cdot}5 \div 4$ = _____

2 $= (152{\cdot}1 \times 8 \div 135{\cdot}2)^2$ = _____

U $= \sqrt{935{\cdot}8} - 15{\cdot}590848$ = _____

T $= 816{\cdot}7 - 32{\cdot}6 \times 15{\cdot}2$ = _____

D $= 8{\cdot}7 \times 3{\cdot}6 + 19{\cdot}47 \div 0{\cdot}5$ = _____

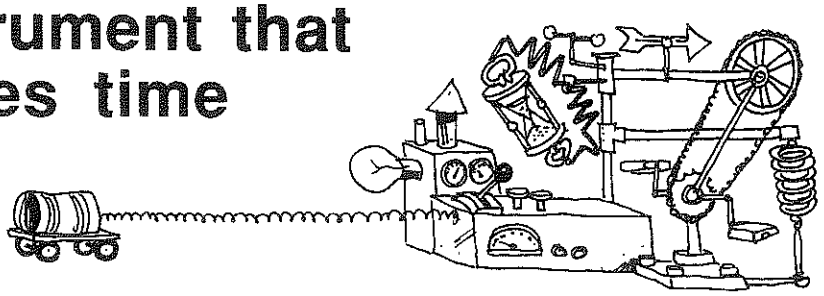
N $= 6{\cdot}82 + 13{\cdot}59 + 72{\cdot}6$ = _____

5 $= \dfrac{0{\cdot}02 \times 500 \times 3{\cdot}5 - 3{\cdot}1}{6{\cdot}38}$ = _____

48·8	4	15	8·19	1	8·19	93·234	2	93·01	5

0·25	4	15	3	70·26	82·7	93·234	3	3	4	15	321·18

An instrument that measures time



Join the dots beside **equal** sets. Each line will pass through a number and letter giving the puzzle code.

{1, 2, 3} •

• {3}

{2, 4, 6} •

H

{5, 1, 2, 8} •

4

T

• {3, 2, 0}

{4, 8, 4, 8, 2} •

E

R

• {0, 1, 5}

11

5

6

• {2, 4, 8}

{ } •

{6, 5} •

C

i

{5, 5, 6} •

M

O

• {1, 1, 1}

• {3, 3, 3}

8

9

3

• {4, 2, 2, 6}

{4, 7, 4} •

10

R

E

• {7, 4}

N

• {1}

O

• {0, 0, 2, 2, 3}

7

• {1, 5, 5, 0}

2

•

• {1, 2, 2, 5, 5, 8}

• {3, 1, 3, 3, 1, 2}

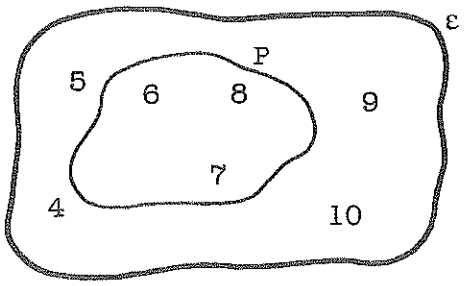
1	2	3	4	5	6	7	8	9	10	11

What did Dracula have to do before he got into the movies?

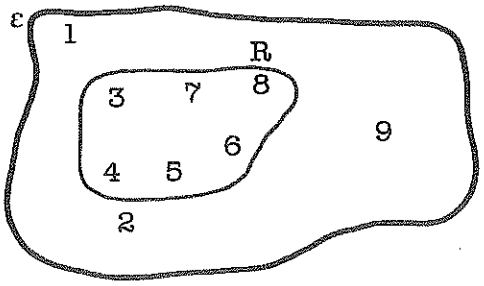
For each of the sets given, determine their complement. The lettered name for each set and its complement gives the puzzle code.

ε = {1, 2, 3, ..., 8, 9, 10}
A = {2, 4, 6, 8, 10}
A′ = _____

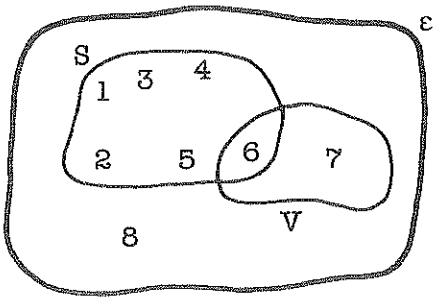
C = {4, 5, 6}
ε = {3, 4, 5, 6, 8, 9}
C′ = _____



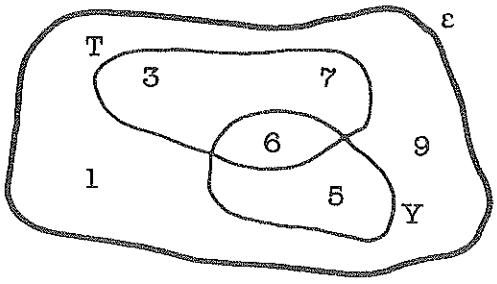
P′ = _____



R′ = _____



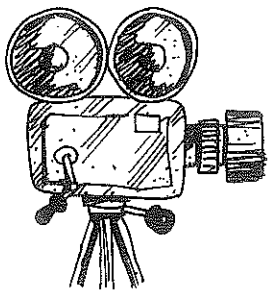
S′ = _____



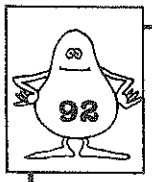
T′ = _____

ε = {5, 10, 15, ..., 30, 35}
E = {10, 20, 30}
E′ = _____

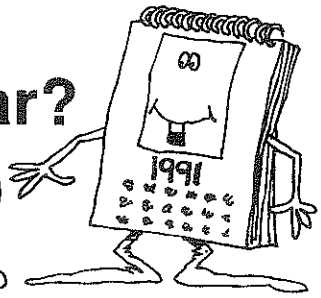
M = {2, 3, 5, 7}
ε = {1, 2, 3, 4, 5, 6, 7, 8, 9}
M′ = _____



{4, 5, 9, 10}	{1,3, 5, 7, 9}	{7, 8}	{7, 8}	{1, 3, 5, 7, 9}
{7, 8}	{3, 8, 9}	{1, 2, 9}	{5, 15, 25, 35}	{1, 3, 5, 7, 9}
{1, 4, 6, 8, 9}	{1, 5, 9}	{5, 15, 25, 35}	{7, 8}	{1, 5, 9}



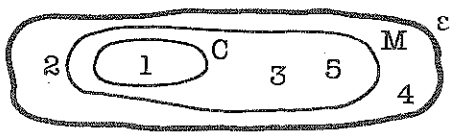
What did one calendar say to the other calendar?



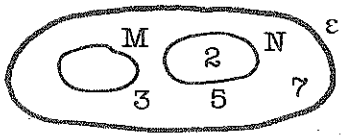
MATCH UP THE NUMBERED SETS WITH THE APPROPRIATE LETTERED VENN DIAGRAM. THE NUMBERS AND CORRESPONDING LETTERS GIVE THE PUZZLE CODE.

1	$\varepsilon = \{1, 2, 3, 4, 5\}$ C = {1, 2} R = {4, 5}
2	$\varepsilon = \{2, 4, 6, 8, 9\}$ M = {2, 6} N = {6, 8}
3	$\varepsilon = \{3, 4, 5, 6, 7, 8, 9\}$ M = {3, 5, 7, 9} R = { 3, 4, 5, 6} S = {8, 9}
4	$\varepsilon = \{1, 2, 3, 4, 5\}$ C = {1} M = {1, 3, 5}
5	$\varepsilon = \{2, 3, 5, 7\}$ M = Ø N = {2}
6	$\varepsilon = \{2, 4, 6, 8, 10, 12, 14\}$ C = {2, 4, 8} M = {12, 14} N = {8, 12, 6}
7	$\varepsilon = \{7, 8, 9\}$ R = {7, 9} S = {8, 9}
8	$\varepsilon = \{2, 3, 5, 7\}$ M = {3, 5, 7} N = {2, 3, 5}
9	$\varepsilon = \{3, 4, 5, 6, 7, 8, 9\}$ M = {3, 5} N = {7, 8, 9} R = {4, 7}

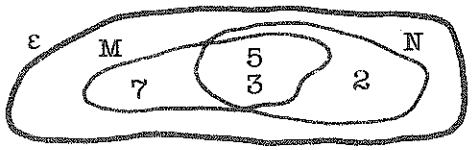
A



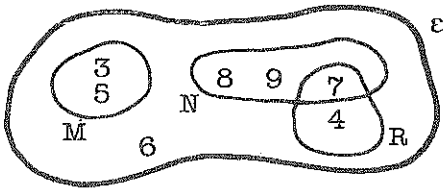
B



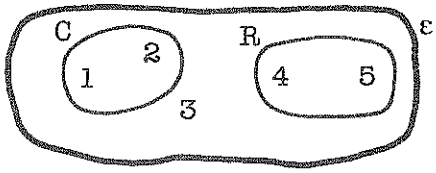
D



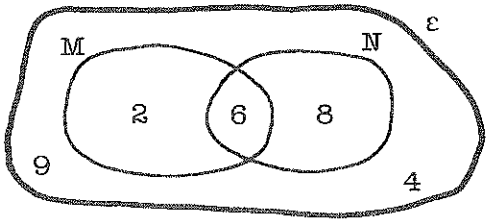
E



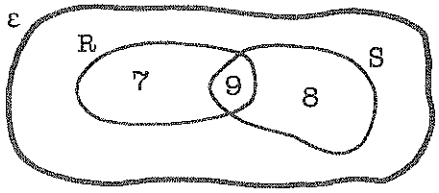
H



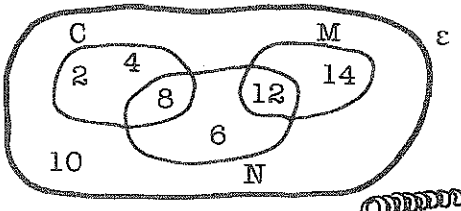
O



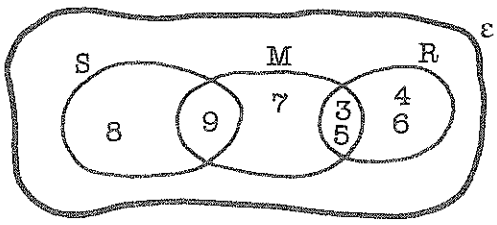
T



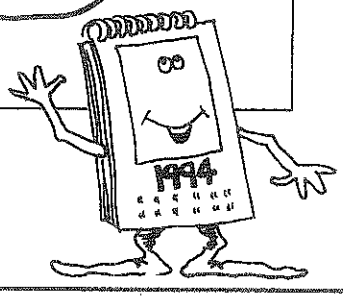
U



W



1	2	3	4	5	2	6	7	4	8	4	7	9



What do you call

Find the answers to the set questions at the bottom of the page, and place the letter for each next to the question. These letters will spell out the solutions.

a thin brown bird?

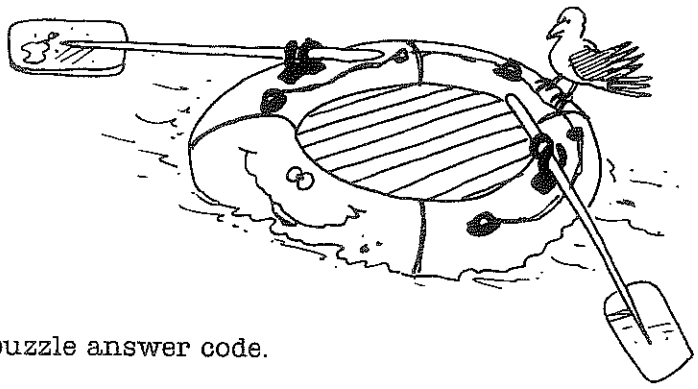
{1, 2, 3} ∪ {2, 3, 4} =	
{a, b, c} ∩ {a, e, i} =	
{1, 2, 3, ... 10} ∩ {0, 1, 2, 3, 4} =	
{bat, ball} ∪ {ball, bell} =	
{bell} ∪ {ball, bat} =	
{blue, red} ∩ {green, red} =	
{2, 3, 4, 5} ∩ {1, 3, 4, 6} =	
{a, b, c} ∩ {b, c, d} =	
{red, blue} ∩ {pink, blue, red} =	
{3, 4} ∪ {2, 3} ∪ {1, 2} =	
{bug, ball, bat, bell} ∩ {bat, bell, ball} =	
{bell} ∪ {bat} ∪ {ball} =	
{ } ∪ {red} =	
{4, 3} ∪ {3} =	

a wet pooch?

{4} ∪ {1, 2, 3} =	
{c} ∪ {b, c} =	
{pink, red, grey} ∩ {blue, red} =	
{1, 2, 3 ... 9} ∩ {0, 1, 3, 5, 10} =	
{3, 1, 5} ∪ {5, 3} =	
{a, e, i, o, u} ∩ {a, c, e, i} =	
{b, c, d, e} ∪ {c, d, e, f} =	
{bat, ball} ∩ {bell} =	
{red} ∪ Ø =	
{1, 2, 3, 4, 5} ∩ {7, 5, 3, 1} =	
{1, 5} ∪ {3, 1} =	
{e, i} ∪ {i, a, e} =	
{b, d, f} ∪ {c, e} =	

{bat, ball, bell} = R		
{a} = N		
{3, 4} = W	{a, e, i} = I	{blue, red} = P
Ø = D	{1, 2, 3, 4} = A	{1, 3, 5} = G
{b, c} = S	{b, c, d, e, f} = E	{red} = O

Why are life rafts always happy?



Answer the sums given to find the puzzle answer code.

$127
$385
$416
+ $263
_____ – A

56 kg
137 kg
84 kg
930 kg
64 kg
+ 273 kg
_____ – E

3 hr 20 min
2 hr 18 min
+ 5 hr 47 min
_____ – I

15 min
2 hr 31 min
+ 5 hr 52 min
_____ – T

516 kg
275 kg
+ 814 kg
_____ – Y

$213
$ 96
$175
+ $307
_____ – S

333 kg
109 kg
+ 216 kg
_____ – G

$347
$269
$416
+ $585
_____ – R

4 hr 17 min
5 hr 38 min
+ 3 hr 52 min
_____ – F

$570
$237
+ $596
_____ – N

52 min
3 hr 47 min
+ 4 hr 58 min
_____ – H

361 kg
893 kg
+ 749 kg
_____ – V

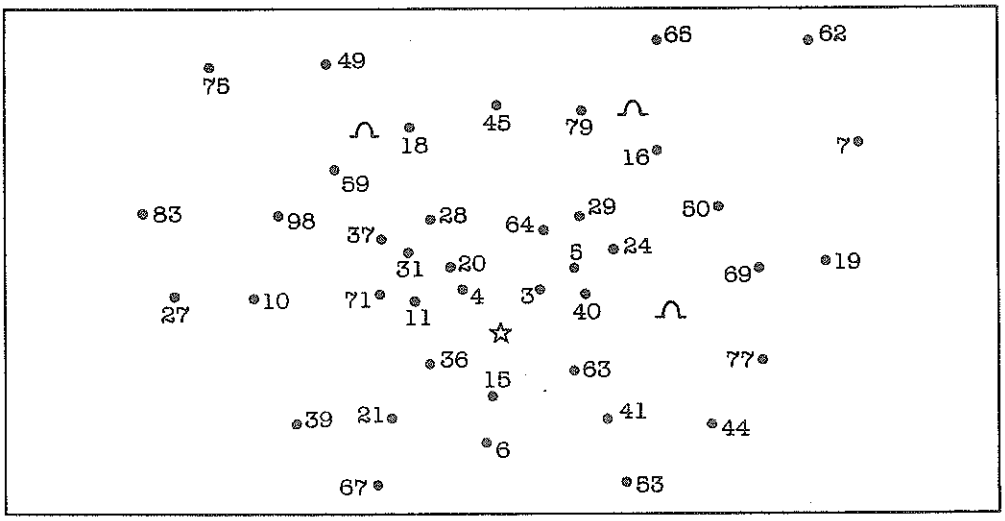
987 kg
54 kg
136 kg
+ 258 kg
_____ – K

$630
$712
+ $483
_____ – L

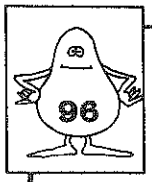
8 hr 38 min	9 hr 37 min	1544 kg	1605 kg	$1403	1544 kg	2003 kg	1544 kg
$1617	9 hr 37 min	$1191	2003 kg	1544 kg	8 hr 38 min	9 hr 37 min	$1191
8 hr 38 min	$791	11 hr 25 min	$1403	1435 kg	11 hr 25 min	$1403	658 kg
13 hr 47 min	1544 kg	1544 kg	$1825	11 hr 25 min	$1403	658 kg	

I'm an Aussie!

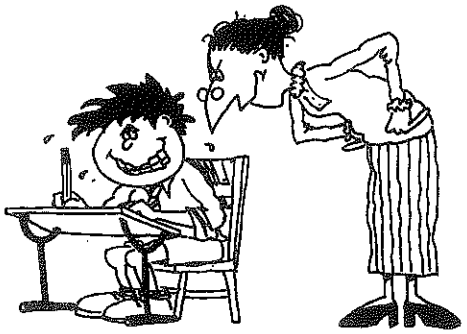
To find the picture, join the dots (next to the answers to the questions) in the order given in each block below.



68 − 47	40 − 37	102 − 53	73 − 33	41 − 25	75 − 6	117 − 89	99 − 50
15 − 9	85 − 22	77 − 59	91 − 88	154 − 104	43 − 24	91 − 54	70 − 11
81 − 40	54 − 39	75 − 16	75 − 11	88 − 19	13 − 6	108 − 37	LARGE DOTS AT 54 − 49 and 57 − 26
107 − 54	32 − 26	134 − 36	83 − 54	92 − 15	80 − 18	73 − 62	
75 − 8	34 − 24	67 − 57	107 − 83	78 − 34	73 − 8	110 − 90	
36 − 15	51 − 24	115 − 76	125 − 109	67 − 14	83 − 4	54 − 26	☆ COLOUR THIS REGION BLACK
99 − 63	100 − 17	71 − 4	97 − 32	92 − 29	62 − 17	34 − 19	∩ COLOUR THESE REGIONS GREY
83 − 79	87 − 12	83 − 59	109 − 30	58 − 17	94 − 76	45 − 9	

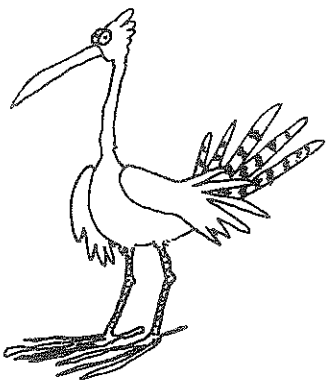


My teacher does bird imitations

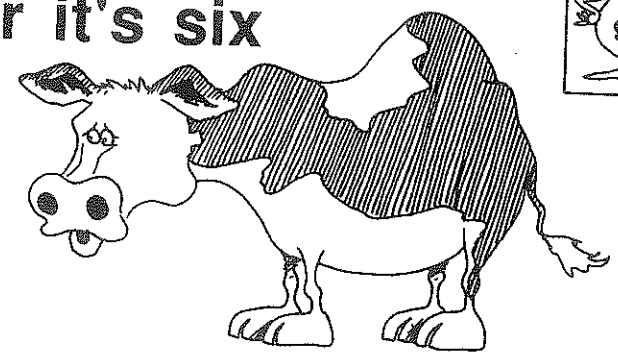


ANSWER THE PRODUCT QUESTIONS TO DISCOVER THE PUZZLE CODE.

16 042	12 796	3800	5546	4588	9144	13 110	12 796	3800	16 042
12 051	3800	7917	6300	2580	3800	4588	12 796	4588	5546	2580

A 62×74	C 138×95	E 38×100
H 457×28	K 43×60	L 91×87
M 103×117	I 70×90	S 1234×13
T 254×36		W 59×94

What's a calf after it's six months old?



ANSWER THE DIVISION QUESTIONS AROUND THE PAGE. JOIN THE DOT NEXT TO EACH QUESTION TO THE DOT NEXT TO ITS ANSWER. EACH LINE WILL PASS THROUGH A LETTER AND NUMBER GIVING THE PUZZLE CODE.

7)378 • 127 • 556 • 910 ÷ 10 • 13 • 74 000 ÷ 1000

2600 ÷ 200 • 39)4953

8)3008 • 1793

5)8965 • 35)7490

4)3528 • 78

12)936 • 3)5961

31 • 13)754

9630 ÷ 30 • 9)5004

58 • 376

3200 ÷ 40 • 882

• 214 • 80

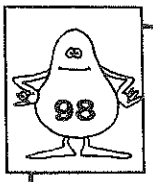
146 • 6)876

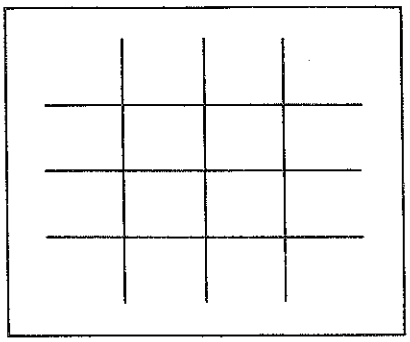
321 • 1987

• 91 • 74 • 54 • 21)651

T 17 I E U M 1 4 16 R 6 A C 13 O P 8 W K 12 15 3 2 L B 11 9 F 5 V 7 N 14

1	2	3	4	5	6	7	8	6	9	4	10	10	4	11	12	2	11
10	12	13	12	2	14	15	2	16	17	10	15	1	4				





What is this?

Answer the fraction questions below, to discover the puzzle code.

$2\frac{1}{2} + \frac{3}{4} =$ **a**

$6 - 2\frac{2}{3} =$ **b**

$2\frac{3}{4} + 1\frac{1}{2} + 2 =$ **d**

$1\frac{5}{6} - \frac{2}{3} =$ **e**

$\frac{7}{8} + 2\frac{2}{3} =$ **g**

$3\frac{2}{5} - 1\frac{1}{4} =$ **h**

$2\frac{1}{2} + \frac{5}{8} + 1\frac{1}{4} =$ **i**

$7\frac{2}{7} - 5\frac{1}{2} =$ **n**

$9 - 4\frac{7}{9} =$ **p**

$\frac{1}{2} + \frac{2}{3} + \frac{3}{4} =$ **r**

$4\frac{1}{5} - 3\frac{7}{8} =$ **s**

$\frac{3}{4} + \frac{4}{5} + \frac{5}{6} =$ **t**

$5\frac{3}{4} + 2\frac{2}{3} - 4\frac{5}{6} =$ **v**

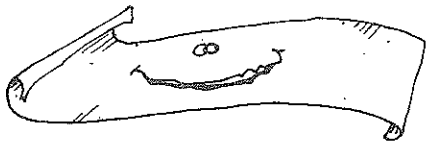
$8 - 2\frac{3}{4} - 1\frac{1}{2} =$ **w**

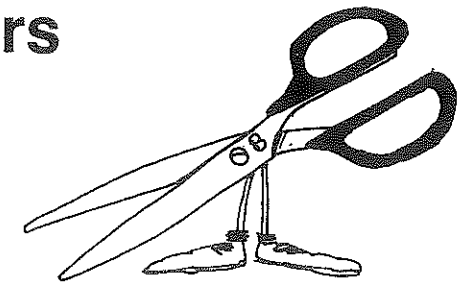
$\frac{7}{10} + \frac{19}{20} - \frac{1}{4} =$ **y**

$\frac{13}{40}$	$4\frac{2}{9}$	$3\frac{1}{4}$	$3\frac{13}{24}$	$2\frac{3}{20}$	$1\frac{1}{6}$	$2\frac{23}{60}$	$2\frac{23}{60}$	$4\frac{3}{8}$
$\frac{13}{40}$	$1\frac{1}{6}$	$1\frac{11}{12}$	$3\frac{7}{12}$	$1\frac{1}{6}$	$6\frac{1}{4}$	$3\frac{1}{3}$	$1\frac{2}{5}$	$3\frac{1}{4}$

$1\frac{11}{14}$	$1\frac{1}{6}$	$3\frac{1}{4}$	$2\frac{23}{60}$	$3\frac{3}{4}$	$3\frac{1}{4}$	$4\frac{3}{8}$	$2\frac{23}{60}$	$1\frac{1}{6}$	$1\frac{11}{12}$

What did the scissors say to the paper?





Answer the fraction questions to discover the puzzle code.

A $\frac{3}{4} \times \frac{8}{15}$

=

=

B $\frac{5}{8} \div \frac{15}{32}$

=

=

C $1\frac{1}{2} \times 2\frac{1}{3}$

=

=

E $5\frac{1}{2} \div 8\frac{1}{4}$

=

=

G $\frac{1}{2} \times \frac{1}{3}$

=

=

I $5 \times 1\frac{2}{3}$

=

=

K $4\frac{1}{3} \div 2$

=

=

M $9 \div 1\frac{1}{2}$

=

=

N $2 \times \frac{3}{4} \times \frac{2}{5}$

=

=

O $5\frac{2}{3} \div 2\frac{4}{15}$

=

=

R $5 \div 7$

=

S $12\frac{3}{5} \times 2\frac{2}{9}$

=

=

T $5\frac{5}{6} \div 5$

=

=

U $\frac{6}{11} \times 2\frac{4}{9} \times 3\frac{3}{4}$

=

=

W $16\frac{5}{7} \div 5\frac{4}{7}$

=

=

$8\frac{1}{3}$	6	$\frac{3}{5}$	$2\frac{1}{2}$	$1\frac{1}{6}$	28	5	$\frac{5}{7}$	$\frac{2}{3}$	$1\frac{1}{3}$	5	$1\frac{1}{6}$
$8\frac{1}{3}$	$2\frac{1}{6}$	$\frac{3}{5}$	$2\frac{1}{2}$	3	$8\frac{1}{3}$	$1\frac{1}{6}$	3	$\frac{2}{5}$	28	$\frac{2}{5}$	
$3\frac{1}{2}$	5	$1\frac{1}{6}$	$1\frac{1}{6}$	$8\frac{1}{3}$	$\frac{3}{5}$	$\frac{1}{6}$	$\frac{5}{7}$	$\frac{2}{3}$	6	$\frac{2}{5}$	$\frac{5}{7}$	$2\frac{1}{6}$

Doctor, I've got this strange feeling I'm a bell!

Answer the questions to find the code.

7·6 g	3·09 g	9·14 m	3·09 g	9·14 m	10·5 g

0·713 g	$0·48	0·713 g	111·1 m	9·14 m	215 g	0·713 g	9·14 m	9·14 m	0·713 g

$15·88	$86·76	3·09 g	$15·88

10·5 g	0·713 g	111·1 m	$0·48	9·14 m	$5·73	38·4 m

6·08 m	$0·48	$71·22	$31·98	38·4 m	$71·22	$71·22	38·4 m	$5·73	10·5 g	6·08 m

114·1 g	18·5 m	114·1 g	111·1 m	$0·48	$5·73	$71·22	60·84 m	$0·48	$86·76

10·5 g	$133	38·4 m	215 g	38·4 m	114·1 g	$5·73	10·5 g	6·08 m	$86·76

$2·35
− $1·87
N

15·4 g
− 7·8 g
G

3·1 m
5·8 m
+ 9·6 m
C

$12·65
− $ 6·92
Q

28·4 g
− 17·9 g
H

107·3 m
− 68·9 m
D

$5·43
$2·08
$6·57
+ $1·80
R

20·7 g
31·6 g
42·8 g
+ 19 g
Z

0·54 m
1·88 m
2·63 m
+ 4·09 m
T

$1·34
$2·16
$5·80
$6·27
$3·91
$7·42
+ $5·08
A

0·31 g
0·56 g
0·78 g
0·09 g
+ 1·35 g
O

1·593 m
0·076 m
2·48 m
+ 1·931 m
M

$26·57
$19·38
$54·26
+ $32·79
U

81·3 g
15·8 g
50·7 g
14·4 g
20 g
+ 32·8 g
L

157·4 m
− 46·3 m
X

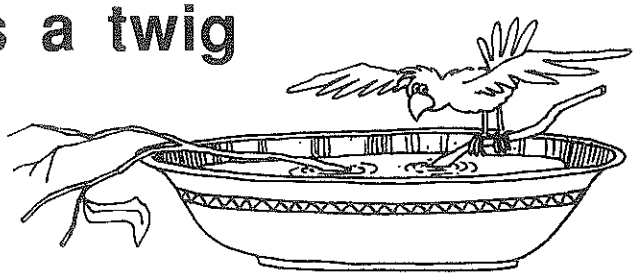
$615·60
− $544·38
S

5·273 g
− 4·56 g
E

15·31 m
12·74 m
8·96 m
+ 23·83 m
V

$34.18
$20
$18·65
+ $13·93
F

Waiter, there's a twig in my soup!



Solve the decimal problems to find the puzzle code.

a $0{\cdot}134 \times 100 =$

b $21{\cdot}3 \div 10 =$

c
$$\begin{array}{r} 19{\cdot}5 \\ \times\ 2{\cdot}6 \\ \hline \\ \hline \end{array}$$

e $6\overline{)51{\cdot}42}$

g $0{\cdot}27 \times 30$
=
=

h $277{\cdot}6 \div 40$
=
=

i $7\overline{)50{\cdot}82}$

l
$$\begin{array}{r} 0{\cdot}218 \\ \times\ 4{\cdot}5 \\ \hline \\ \hline \end{array}$$

m
$$\begin{array}{r} 250 \\ \times\ 0{\cdot}48 \\ \hline \\ \hline \end{array}$$

n
$$\begin{array}{r} 3{\cdot}7 \\ \times\ 5{\cdot}9 \\ \hline \\ \hline \end{array}$$

o $0{\cdot}1884 \div 1{\cdot}2$
=
)

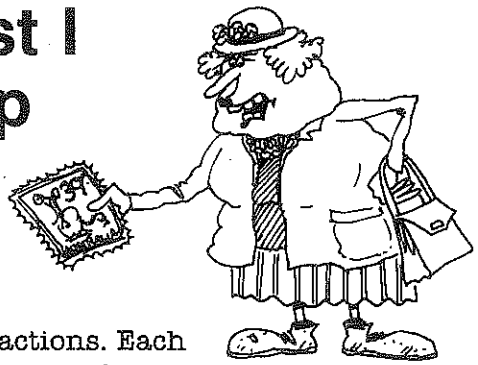
r
$$\begin{array}{r} 87{\cdot}8 \\ \times\ 0{\cdot}5 \\ \hline \\ \hline \end{array}$$

s $0{\cdot}12 \times 0{\cdot}9$
=

t $110{\cdot}67 \div 70$
=
=

6·94	13·4	21·83	8·1	0·157	21·83	0·108	7·26	43·9	7·26
0·981	0·981	50·7	13·4	0·981	0·981	1·581	6·94	8·57	2·13	43·9
13·4	21·83	50·7	6·94	120	13·4	21·83	13·4	8·1	8·57	43·9

Young man, must I stick this stamp on myself?



Join the dots next to the equivalent decimals and fractions. Each line will pass through a letter and number giving the puzzle code.

0·76 = _____

0·15 = _____

2·4 = _____

$0.\dot{7}$ = _____

1·75 = _____

$0.\dot{6}$ = _____

0·375 = _____

2·35 = _____

1·9 = _____

$0.\overline{714285}$ = _____

0·42 = _____

0·875 = _____

$\frac{7}{8}$

$\frac{2}{3}$

$2\frac{7}{20}$

$\frac{7}{9}$

$\frac{3}{20}$

$\frac{3}{8}$

$1\frac{9}{10}$

$\frac{19}{25}$

$\frac{21}{50}$

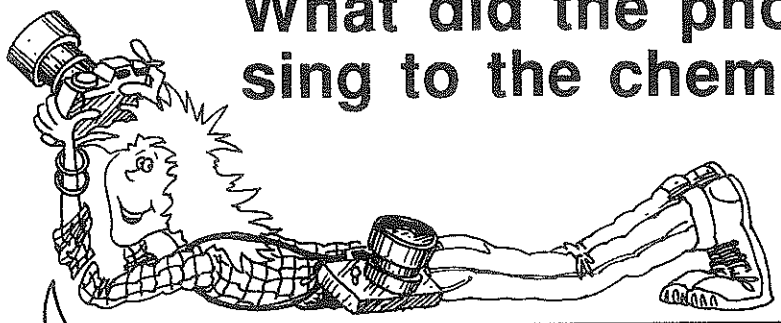
$1\frac{3}{4}$

$\frac{5}{7}$

$2\frac{2}{5}$

1	2	3	4	5	6	7	5	4	2	1
4	8	9	9	1	10	9	11	2	12	9

What did the photographer sing to the chemist?



Express the values given below, accurate to 3 decimal places, to discover the puzzle code.

2·828	2·167	7·673	3·162	1·286	2·646	1·667

7·673	1·667	3·464	6·283	5·434	3·317	1·538	2·828
1·732	5·434	4·047	4·047	3·142	2·167	7·673	3·162

$\sqrt{7} \simeq$ **a**

$\pi \simeq$ **c**

$\frac{9}{7} \simeq$ **d**

$\sqrt{10} \simeq$ **e**

$6{\cdot}37 \times 0{\cdot}853$

$\simeq$ **i**

$8{\cdot}7 \div 2{\cdot}15$

$\simeq$ **l**

$60{\cdot}9 \times 0{\cdot}126$

$\simeq$ **m**

$\sqrt{11} \simeq$ **n**

$\frac{13}{6} \simeq$ **o**

$\sqrt{12} \simeq$ **p**

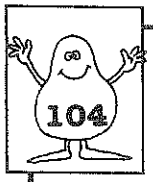
$2\pi \simeq$ **r**

$\sqrt{8} \simeq$ **s**

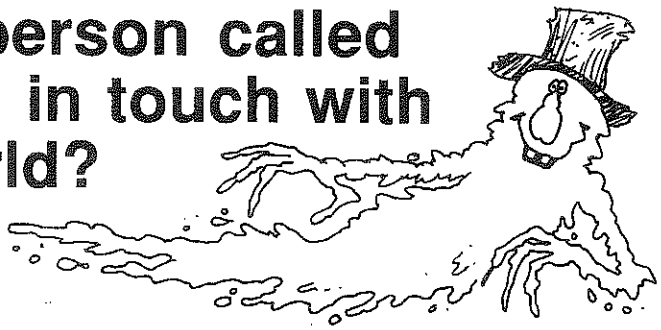
$\frac{20}{13} \simeq$ **t**

$\sqrt{3} \simeq$ **w**

$\frac{5}{3} \simeq$ **y**

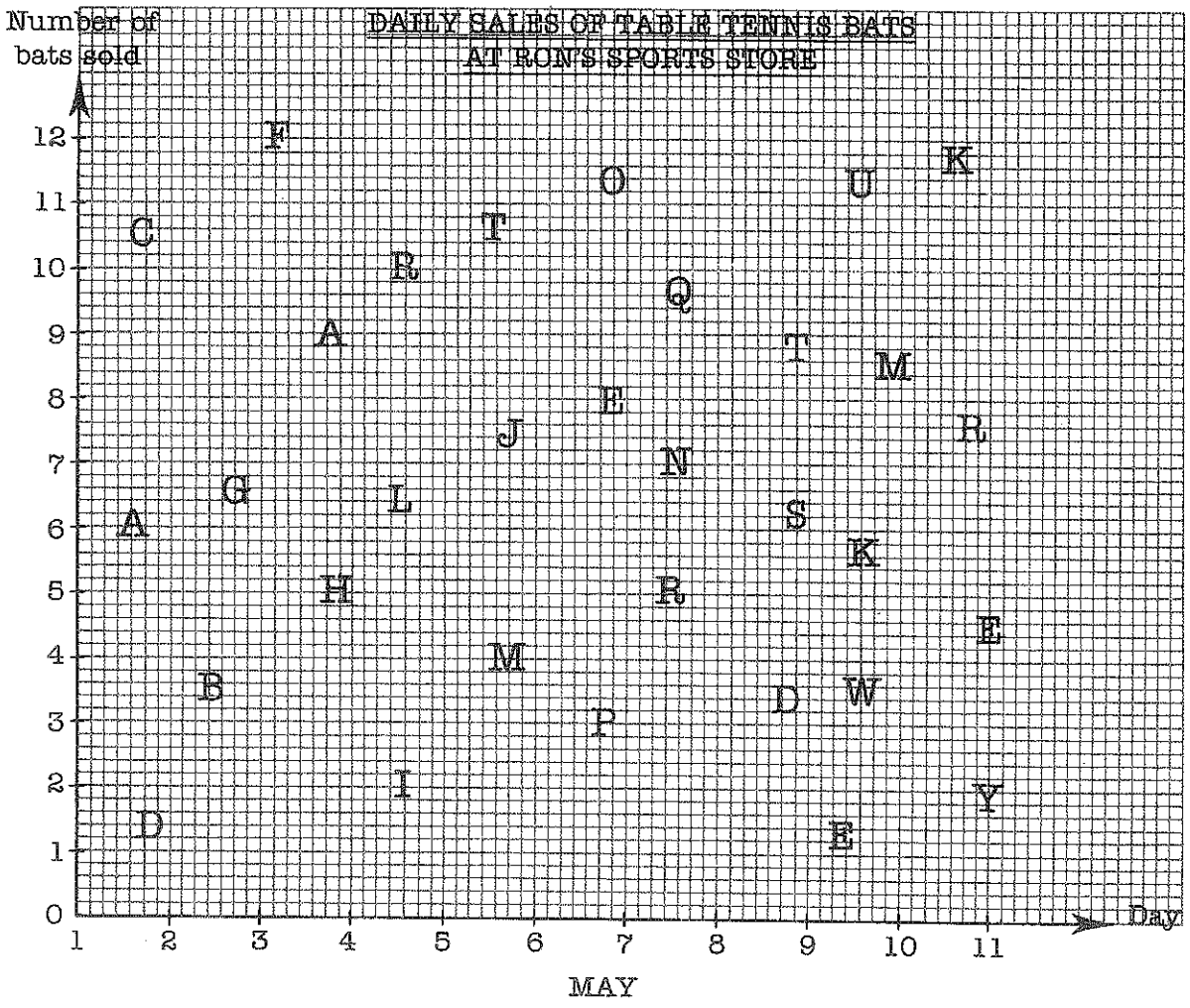


What is the person called who puts you in touch with the spirit world?

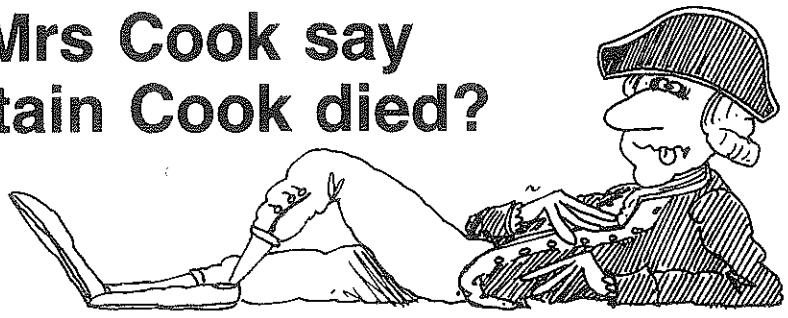


From the table tennis bat sales given in the table below, complete the **line graph**. The line passes through 10 letters and gives the name required.

DAY	MAY 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th
Number of bats sold per day at Ron's Sports Store.	9	4	3	11	9	12	7	7	2	0	10

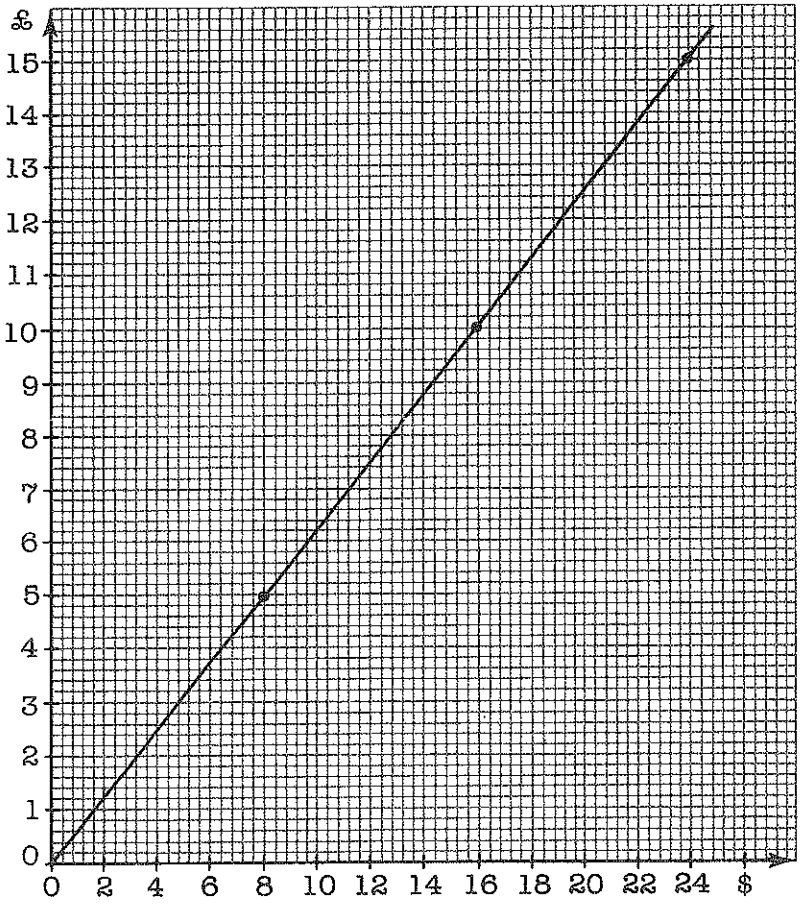


What did Mrs Cook say when Captain Cook died?



The graph shown is used to convert Australian dollars ($) to Paradise pounds (£). In the puzzle answer at the bottom of the page, convert the amount given to the equivalent amount in the other currency. Locate this new value in the letter code column to discover the puzzle answer.

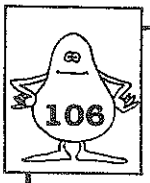
CONVERSION GRAPH
$ AUSTRALIAN DOLLARS —
£ PARADISE POUNDS.



LETTER CODE	
A	£2·50
C	$24
K	$2
E	$12.80
B	$0·80
Y	£7
T	$8
I	£13·75
O	£12
S	£12·50
U	£14
H	£10
L	£9
W	$1·60

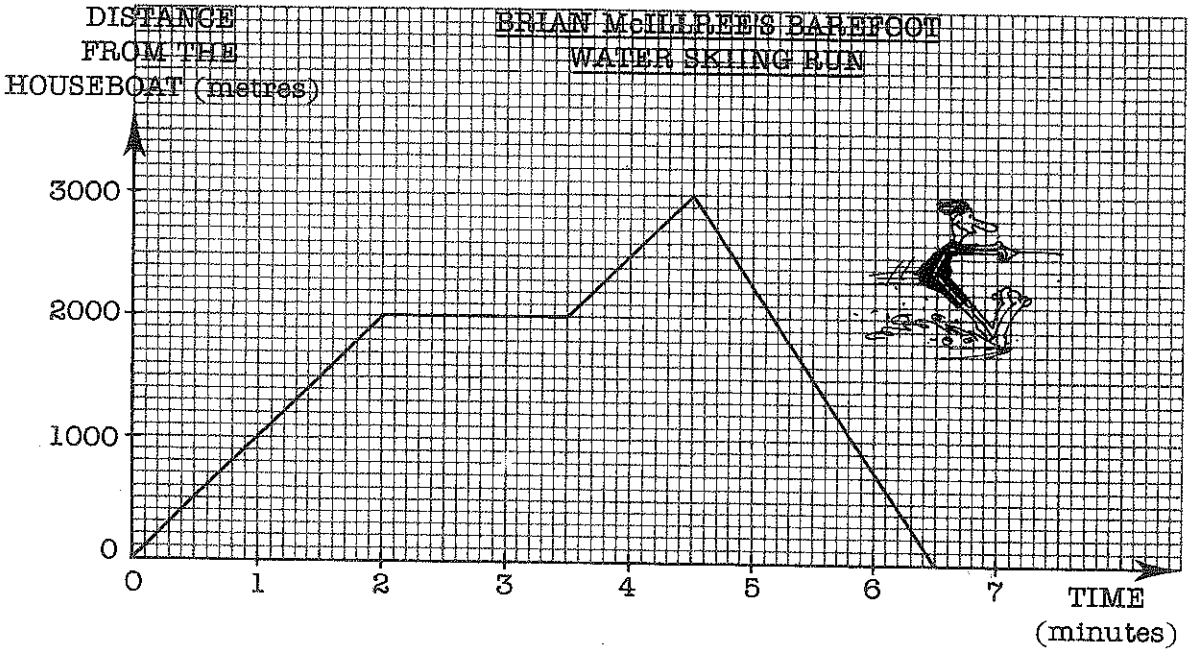
R	$3·20
M	$6

£5	$16	$4	£5	$20	£5	$16	£8	£1	$4	$11·20	£5	$16	£8
£15	$19·20	$19·20	£1·25	$22	£8	£15	£2	$22·40	£3·75	£0·50	$14·40	£8	$20



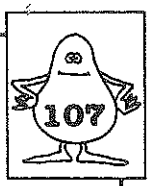
What's green and eats porridge?

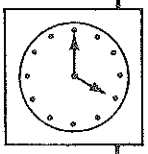
Answer the questions from the water skiing travel graph to find the puzzle code



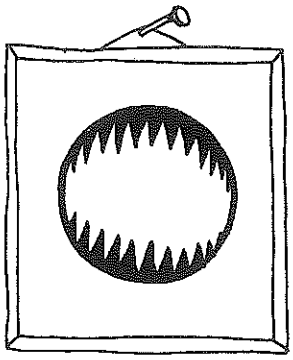
How far from the houseboat did Brian ski?	**C**	**D**	Brian fell off in the middle of his run. How long did he wait before starting again?
How long after the start did he turn around to come back to the houseboat?	**E**	**I**	How fast, in metres per minute, was Brian travelling in the first 2 minutes?
How many minutes did Brian actually spend skiing?	**K**	**L**	How long did the complete trip take?
How fast was Brian skiing in the last return part of his run?	**M**	**O**	How far from the houseboat was he, $5\frac{1}{2}$ minutes after the start?
How far from the houseboat was Brian $2\frac{1}{2}$ minutes before he returned?	**S**	**U**	How far did Brian ski in the last 30 seconds of his trip?

1500 m.p. min	1500 m	750 m	$6\frac{1}{2}$ min	$1\frac{1}{2}$ min	1000 m.p. min
$4\frac{1}{2}$ min	$6\frac{1}{2}$ min	1500 m	3000 m	5 min	2500 m





Name this picture



Complete the frequency table and the histogram from the data given on the number of games of table tennis played by children at a holiday camp. Follow the instructions beside the table and graph to find the code.

NUMBER OF GAMES OF TABLE TENNIS PLAYED BY EACH CHILD AT THE CAMP

13	11	15	16	13
10	16	12	11	12
15	12	13	16	14
14	11	10	12	16
12	16	14	16	12
16	13	12	11	15
13	11	15	12	13

Frequency Table

Number of games played	Tally	Frequency
10		
11		
12		
13		
14		
15		
16		
	Total	

Frequency gives the code

10 ← A
11 ← C
12 ← E
13 ← I
14 ← O
15 ← C
16 ← I

HISTOGRAM

GAMES OF TABLE TENNIS PLAYED

Frequency	R	C	U	I	S	L	V
	2	19	10	8	13	35	3
8	4	16	33	3	18	6	15
7	5	5	18	32	4	2	6
6	16	28	24	14	5	1	12
5	41	3	13	7	2	9	7
4	19	2	9	5	20	32	6
3	1	16	11	3	3	25	4
2	27	15	6	12	18	8	8
1	6	0	27	26	7	14	3
0	10	11	12	13	14	15	16

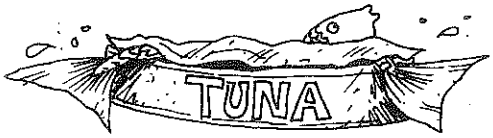
Games played

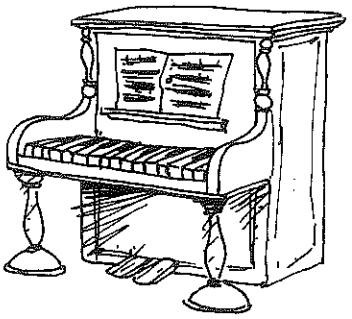
CODE LETTERS

Shade in the columns and match the number on top of each with the code letter above it.

2	15	6	5	7	3	10	20	4	32	1	28	9	8

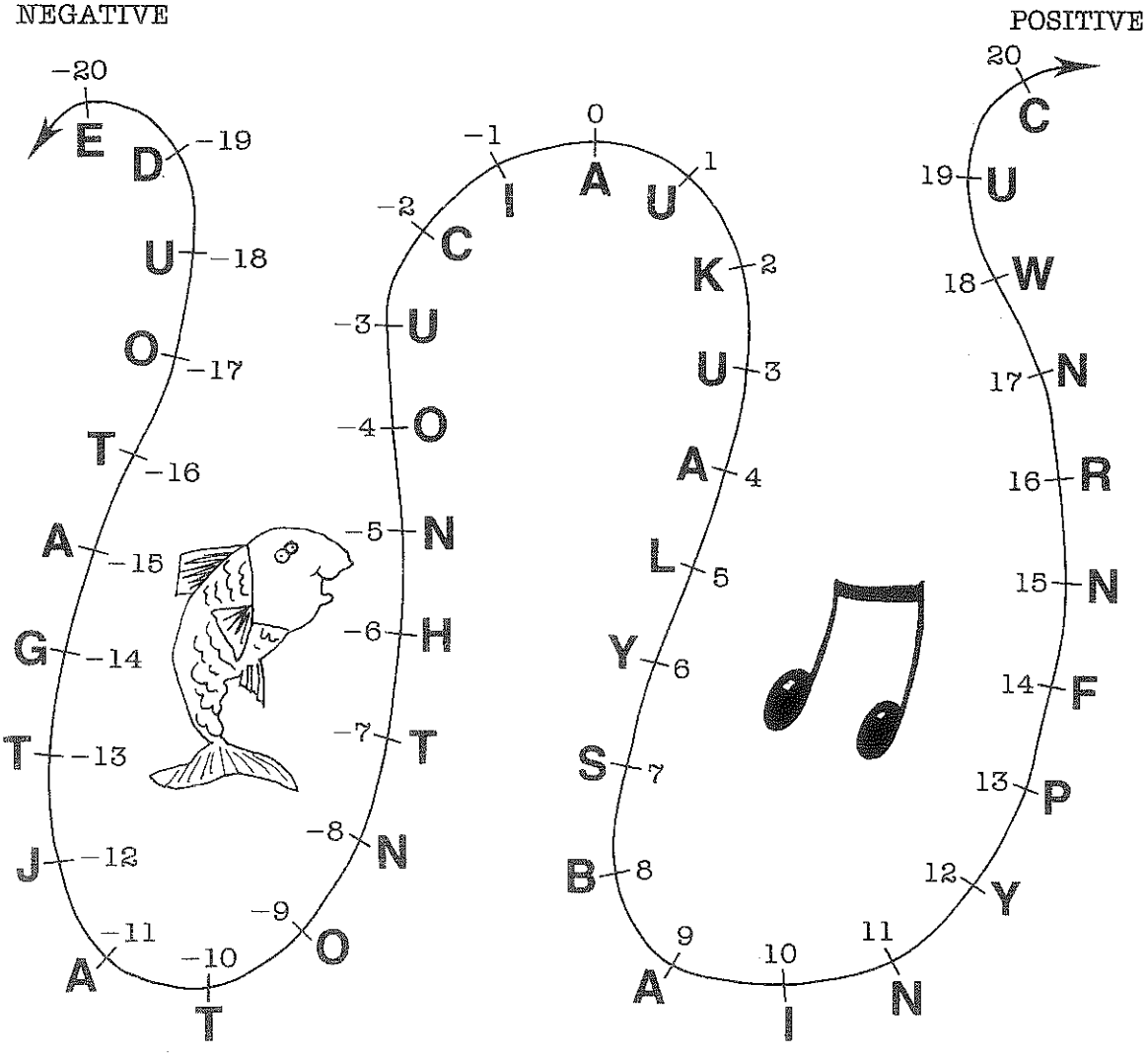
What's the difference between a can of tuna and a piano?





6	−17	19	2 above −4	5 below −10	3 above 14	−7	8 above −5	11 below 6	−20	3 above −14
3 above 10	10	5 below 5	6 above 9	6 below −3	8	5 below 2	−13	13 above −1	13 below 9	−18
6 above 14	4	8 below 19	4 below −6	3 above −19	1	4 above −12	9	5 above 9	6 below 5	9 above −2	−6

Locate the positions given above, on the number line, and replace the positions with the letters found to discover the puzzle answer.



Why did the sheepdog have her puppies in a rubbish bin?

Answer the questions given to decode the first message, and then use it to find the answer to the puzzle.

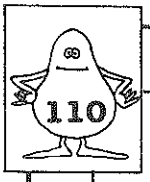
3	13	12	−10	−7	13	−6	0	−19	−6	−9	−7	13	−8	−6	6	−10	1	1	−10	−6	−4

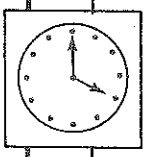
8	−1	1	9	−10	−19	6	16	9	−19	5	−10	1	−7	13	−6	−10	−19	−11	9	13	−7

$8 + {}^{-}5 =$	=	**M**	**I**	$= {}^{-}15 + {}^{+}23 =$
${}^{-}3 + {}^{+}9 =$	=	**L**	**E**	$= 2 + {}^{-}3 + {}^{-}9 =$
$7 + {}^{+}9 =$	=	**P**	**U**	$= {}^{-}3 + {}^{-}4 + {}^{-}1 =$
$-2 + {}^{-}5 =$	=	**F**	**H**	$= 16 + {}^{-}2 + {}^{-}5 =$
${}^{+}4 + {}^{-}7 =$	=	**Z**	**O**	$= {}^{-}5 + {}^{+}20 + {}^{-}2 =$
${}^{-}12 + {}^{+}3 =$	=	**D**	**J**	$= {}^{-}2 + {}^{-}3 + {}^{-}9 =$
${}^{-}5 + {}^{-}6 =$	=	**C**	**A**	$= {}^{-}30 + 9 + {}^{+}2 =$
${}^{+}8 + {}^{+}4 =$	=	**V**	**S**	$= 5 + {}^{-}7 + {}^{-}2 =$
$-3 + {}^{-}2 =$	=	**Y**	**B**	$= {}^{-}7 + 30 + {}^{-}18 =$
${}^{-}9 + {}^{+}10 =$	=	**T**	**R**	$= {}^{-}1 + {}^{-}2 + {}^{-}3 =$
$6 + {}^{-}6 =$	=	**W**	**N**	$= 6 + {}^{-}9 + 2 =$

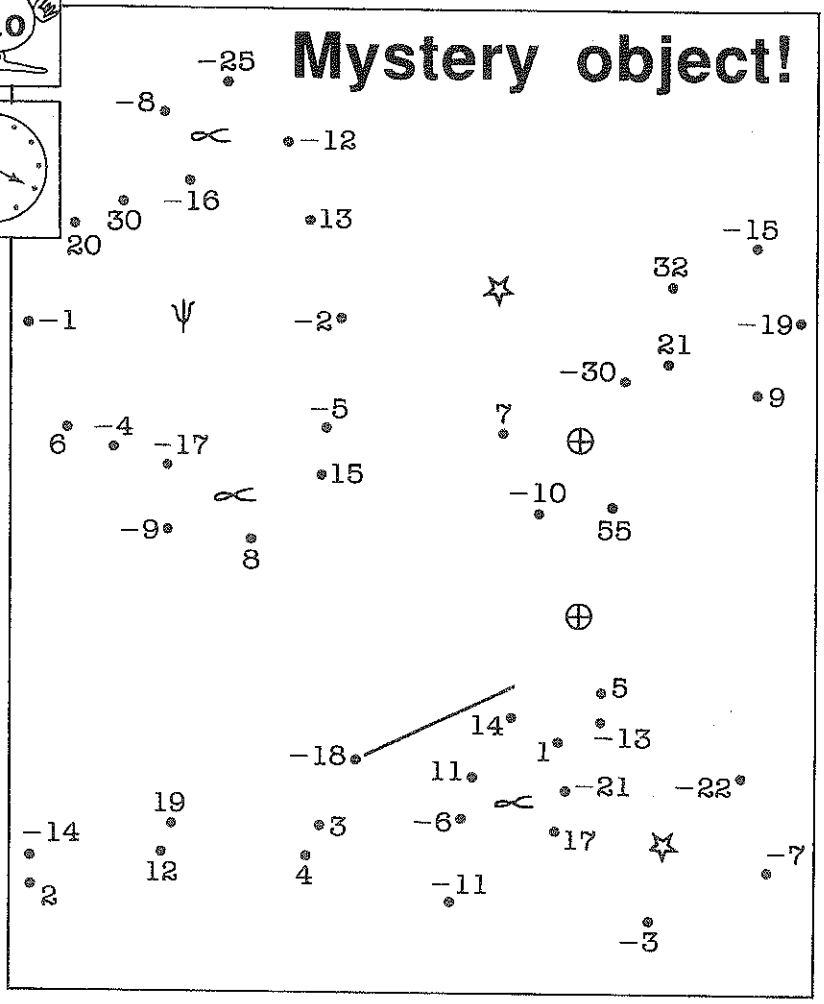
16	−9	−19	13	−10	−11	−14	13	0	−10	−3

6	9	0	−5	−19	9	−10	16	16	−19	−1	−9	−19	−1	−19





Mystery object!



Answer the questions given and join the dots next to the answers, in the order given in each block.

$5 - 3 =$
$10 - {}^{-}2 =$
$8 - {}^{+}4 =$
${}^{-}5 - 6 =$
${}^{-}9 - {}^{-}6 =$
${}^{-}2 - {}^{+}5 =$
${}^{-}15 - {}^{+}7 =$
${}^{-}3 - {}^{-}8 =$
${}^{-}20 - {}^{-}7 =$
${}^{+}7 - {}^{+}6 =$
$17 - 3 =$
${}^{-}40 - {}^{-}30 =$
${}^{+}50 - {}^{-}5 =$
${}^{-}25 - 5 =$
$0 - {}^{-}8 =$
${}^{-}1 - {}^{-}16 =$
$2 - {}^{+}7 =$
${}^{-}9 - {}^{+}8 =$
${}^{+}18 - {}^{+}12 =$
$5 - {}^{+}6 =$
${}^{-}10 - {}^{-}30 =$
$25 - {}^{-}5 =$
${}^{-}12 - {}^{-}4 =$
$5 - {}^{+}30 =$
$17 - {}^{-}15 =$
${}^{-}8 - {}^{+}7 =$
${}^{-}21 - {}^{-}2 =$
$12 - {}^{+}3 =$
$25 - {}^{+}4 =$
${}^{-}18 - {}^{+}12 =$

${}^{-}4 - {}^{+}2 =$
$21 - {}^{+}4 =$
${}^{-}25 - {}^{-}4 =$
$8 - {}^{-}3 =$
${}^{-}5 - 1 =$

${}^{-}7 - {}^{-}2 =$
$5 - {}^{+}7 =$
$17 - 4 =$
${}^{-}12 - {}^{+}4 =$
$29 - {}^{-}1 =$

COLOUR

☆ YELLOW
⊕ GREEN
≺ BLACK
ψ ORANGE

${}^{-}2 - {}^{-}5 =$
$9 - {}^{+}5 =$

${}^{-}8 - {}^{-}13 =$
$61 - {}^{+}6 =$

${}^{-}11 - {}^{-}7 =$
${}^{-}5 - {}^{+}4 =$
${}^{-}3 - {}^{-}11 =$

${}^{-}10 - {}^{-}17 =$
${}^{-}12 - {}^{-}2 =$

${}^{-}19 - {}^{+}6 =$
${}^{-}7 - {}^{+}5 =$
$8 - {}^{-}5 =$

${}^{-}21 - {}^{-}7 =$
${}^{-}1 - {}^{-}20 =$
${}^{-}7 - {}^{-}10 =$
${}^{-}13 - {}^{+}5 =$

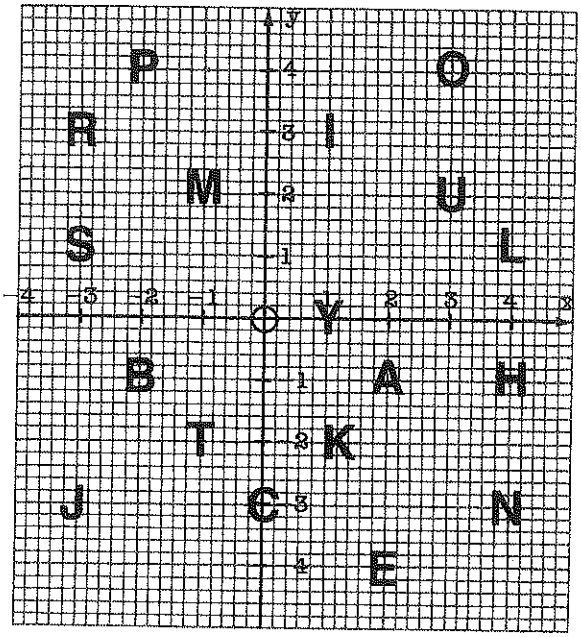
Discover the authors

In the coded answer, exchange the position coordinates with the letter found at each position on the grid.

SUDDEN BRIGHT LIGHTS BY

(−1, 2) (2, −1) (−3, −3) (3, 4) (−3, 3)

(−2, −1) (4, 1) (1, 3) (4, −3) (1, −2)

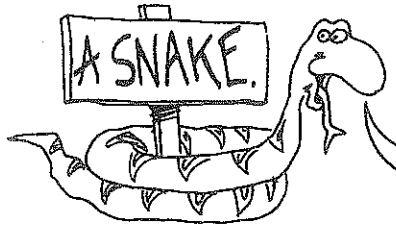


WHAT THE BUTLER SAW BY

(−1, 2) (3, 2) (−3, 1) (−1, −2) (2, −1) (−2, 4) (4, −1) (2, −1)

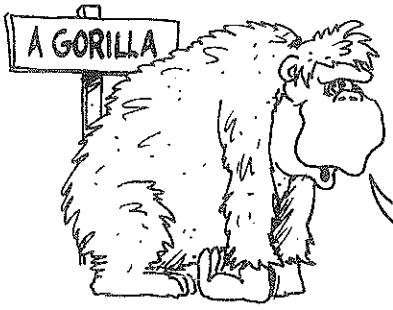
(4, −3) (3, 2) (−1, −2) (4, −1) (2, −4) (−3, 3) (4, 1) (3, 4) (3, 4) (1, −2)

What is the first thing they learn at school?



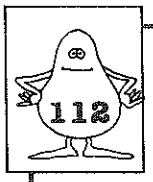
(4, −1) (1, 3) (−3, 1) (−3, 1) (−3, 1)

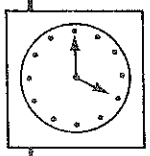
(−3, 1) (−1, −2) (3, 4) (−3, 3) (1, 0)



(4, −1) (1, 3) (−3, 1) (2, −1) (−2, 4)

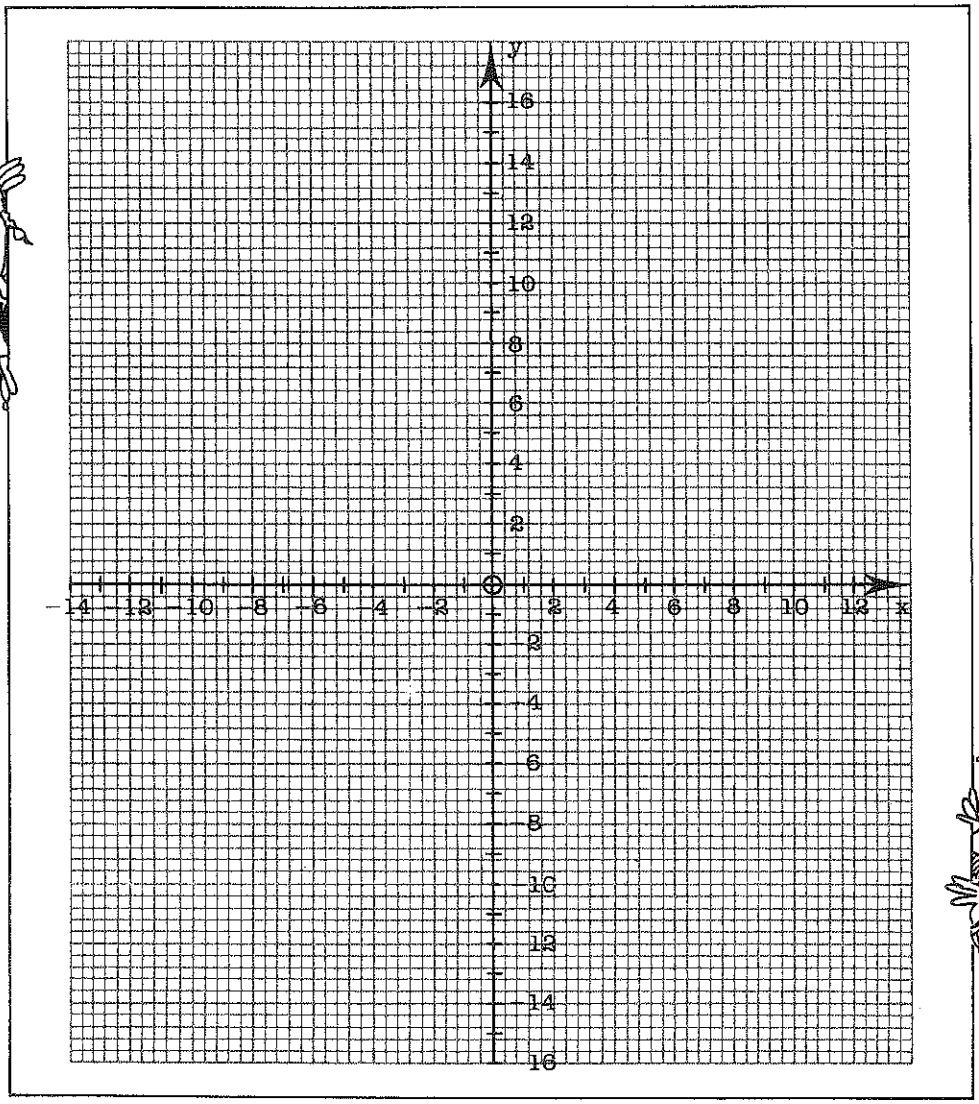
(2, −4) (−2, −1) (0, −3) (−3, 1)





What am I?

Join the positions in the order given.
Stop your line at a full stop •, and
start a new line from the next position.



(−9, 14) → (−9, 15) • (−4, 15) → (−2, 15) • (4, 8) → (5, 9) → (5, 12) → (7, 14) → (8, 12) → (8, 10) • (−7, 14) →

→ (−7, 16) → (−5, 16) → (−5, 15) → (−7, 15) • (1, 12) → (2, 14) • (−6, 11) → (−6, 12) → (−4, 13) • (5, −16) →

→ (3, −13) → (3, −11) → (7, −9) → (9, −6) → (11, −2) → (11, 4) → (8, 10) → (5, 12) → (3, 14) → (2, 14) → (3, 12) →

→ (3, 10) → (2, 9) → (1, 9) → (1, 12) → (−3, 11) → (−1, 11) → (−3, 10) → (−5, 8) → (−3, 9) → (−1, 8) → (0, 6) →

→ (−2, 2) → (−4, 0) → (0, 2) → (0, 1) → (3, 1) → (2, 0) → (5, 0) → (4, −1) → (7, −2) → (6, −2) → (7, −4) →

→ (6, −4) → (7, −6) → (6, −6) → (6, −8) → (5, −7) → (4, −9) → (4, −8) → (2, −11) → (2, −10) → (−1, −11) →

→ (0, −12) → (0, −16) • (−11, 14) → (−13, 14) → (−13, 16) → (−11, 16) • (−9, −15) → (−7, −14) → (−5, −12) →

→ (−3, −11) → (−7, −9) → (−9, −9) → (−5, −5) → (−7, −4) → (−9, −2) → (−10, 1) → (−12, 1) → (−12, −2) →

→ (−11, −1) → (−10, 1) → (−9, 3) → (−7, 6) → (−5, 8) • (−4, 11) → (−6, 12) → (−6, 13) • (−9, 0) → (−6, 0) →

→ (−5, 1) → (−4, 3) → (−3, 5) → (−4, 6) → (−5, 6) → (−7, 4) → (−8, 2) → (−8, 0) • (−9, 13) → (−9, 11) →

→ (−10, 11) → (−10, 13) • (−6, 5) → (−5, 4) → (−5, 3) → (−6, 1) → (−7, 1) → (−7, 3) → (−6, 4) → (−5, 4) →

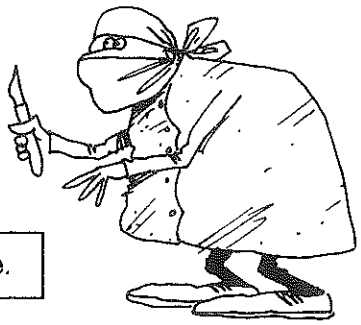
→ (−4, 3) • (−7, −7) → (−9, −6) → (−11, −4) → (−12, −2) • (−8, 11) → (−8, 13) → (−7, 11) → (−7, 13) •

(−3, −11) → (−1, −11) • (−10, 16) → (−10, 15) → (−9, 15) → (−9, 16) • (−11, 11) → (−11, 13) → (−12, 12) →

→ (−13, 13) → (−13, 11) • (−6, 0) → (−5, 0) • (−8, 16) → (−8, 14) • (−10, 14) → (−10, 15) •

COLOUR	**BROWN**	The region around (5, 6) and (7, 12)	**BLACK**	The region around (−6, 2) and (−11, 0)

Did you hear about the plastic surgeon?



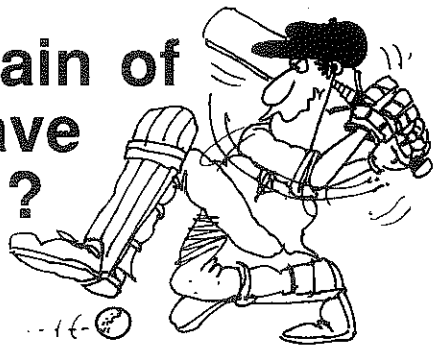
Answer the questions to discover the puzzle code.

$6 \times {}^{-}3 =$ **A**	${}^{-}2 \times {}^{-}7 =$ **D**
${}^{-}\frac{1}{2} \times {}^{+}8 =$ **E**	$0{\cdot}8 \times {}^{-}2{\cdot}5 =$ **F**
${}^{-}3 \times {}^{+}4 \times {}^{-}2 =$ **H**	${}^{-}1\frac{1}{2} \times {}^{-}10 =$ **I**
${}^{-}20 \times {}^{-}10 \times {}^{-}0{\cdot}03 =$ **L**	${}^{-}9 \times {}^{-}3 \times 2 =$ **M**
$-3\frac{1}{3} \times {}^{-}6 =$ **N**	${}^{-}0{\cdot}4 \times {}^{+}2{\cdot}5 =$ **O**
${}^{-}1 \times {}^{+}2 \times {}^{-}3 \times {}^{+}4 \times {}^{-}5 =$ **R**	${}^{+}30 \times {}^{-}\frac{1}{2} =$ **S**
$2 \times {}^{-}5 \times {}^{-}3 =$ **T**	

24	−4	−15	−18	30	15	20	−2	−120	−1	20	30	−1	−2
30	24	−4	−2	15	−120	−4	−18	20	14	54	−4	−6	30	−4	14

!

Who is the only Captain of Australia never to have played at the M.C.G.?



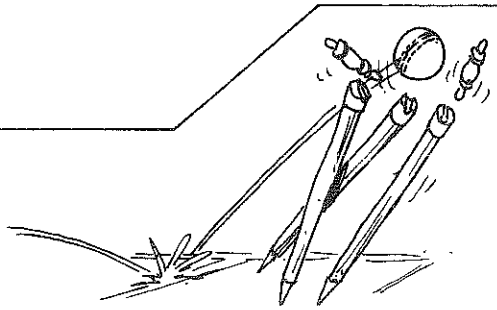
Answer the questions given, and exchange the answers at the bottom of the page for the letter next to the questions.

a $= {}^{-}25 \div {}^{-}5$

$=$

c $= {}^{-}120 \div {}^{+}6$

$=$



i $= {}^{-}95 \div {}^{-}5$

$=$

p $= ({}^{-}100 \div 4) \div {}^{+}5$

$=$

k $= {}^{-}160 \div {}^{-}16$

$=$

o $= 72 \div {}^{-}9$

$=$

t $= \frac{-65}{-5}$

$=$

a $= {}^{+}84 \div {}^{-}14$

$=$

c $= {}^{-}240 \div {}^{+}8$

$=$

n $= 406 \div {}^{-}7$

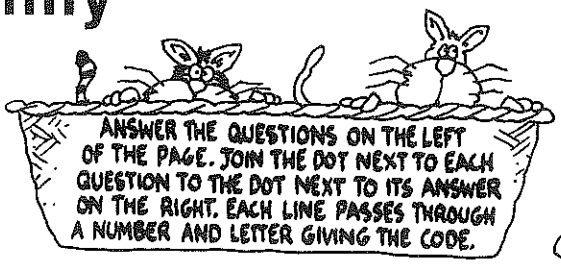
$=$

o $= \frac{{}^{+}63}{{}^{-}7}$

$=$

−30	−6	−5	13	5	19	−58	−20	−9	−8	10

4 members of the cat family



ANSWER THE QUESTIONS ON THE LEFT OF THE PAGE. JOIN THE DOT NEXT TO EACH QUESTION TO THE DOT NEXT TO ITS ANSWER ON THE RIGHT. EACH LINE PASSES THROUGH A NUMBER AND LETTER GIVING THE CODE.

$(^{-}3)^{2} \times {}^{-}2 =$ _____

$^{+}12 - {}^{-}3 + 8 =$ _____

$^{-}4 \times 8 \div {}^{-}2 =$ _____

$^{-}5 + 7 - 3 =$ _____

$^{-}24 \div (4 - {}^{-}2) =$ _____

$6 + {}^{+}5 - {}^{-}4 + {}^{-}3 =$ _____

$30 \div ({}^{-}5 \times {}^{-}2) =$ _____

$^{-}7 - 6 =$ _____

$^{-}28 \div (^{-}2)^{2} =$ _____

$^{-}13 + 11 - 18 =$ _____

$(17 + {}^{-}8) \div {}^{-}3 =$ _____

$11 - {}^{-}4 + {}^{-}9 - 8 =$ _____

$2 \times {}^{-}3 \times {}^{-}4 =$ _____

$^{-}48 \div 4 \div {}^{-}3 =$ _____

$(3 - {}^{-}11) - (2 - 7) =$ _____

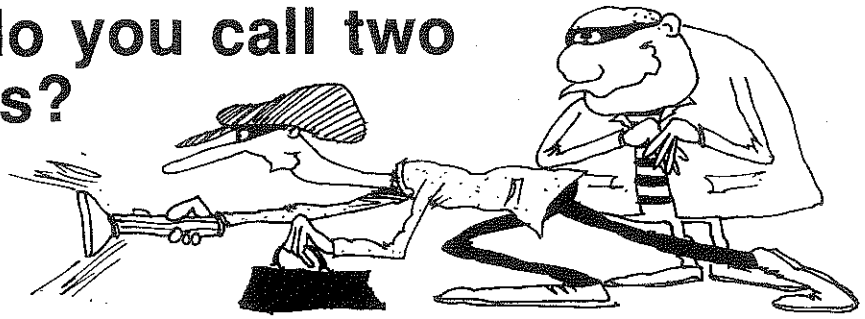
C 15 S 3 T 7 N 6 F W 1 13 10 R 14 12 H 5 O 9 4 E K A 2 11 I 8 M D

$^{-}4$ $^{+}23$ $^{+}24$ $^{-}13$ $^{-}20$ $^{-}18$ $^{+}12$ $^{-}2$ $^{-}1$ $^{-}7$ $^{+}19$ $^{-}3$ $^{+}16$ $^{+}4$ $^{+}3$

1	2	3	4	5	6	7	2	3	8	9	3	4	5	6

7	2	3	2	10	11	3	12	9	13	14	3	3	5	10	15

What do you call two robbers?



Simplify the expressions below to discover the puzzle answer code.

$2a + 3a - 4a$ = **B**

$6 \times b \div 2$ = **L**

$7 \times c + 3 \times c$ = **R**

$3b + 5 + 4b$ = **D**

$10a - 2 - 7a + 5$ = **M**

$2 \times m - 3 \times 7$ = **T**

$\frac{15 \times c}{3}$ = **E**

$5 \times a \times b + 2ab$ = **N**

$3m + 8m - 5m$ = **X**

$12 \times a - 3 \times a - 2a$ = **H**

$3b - 8b + 10b$ = **O**

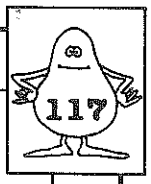
$2 \times a \times b + b \times 3 \times a$ = **Z**

$\frac{3 \times c + 7 \times c}{5}$ = **J**

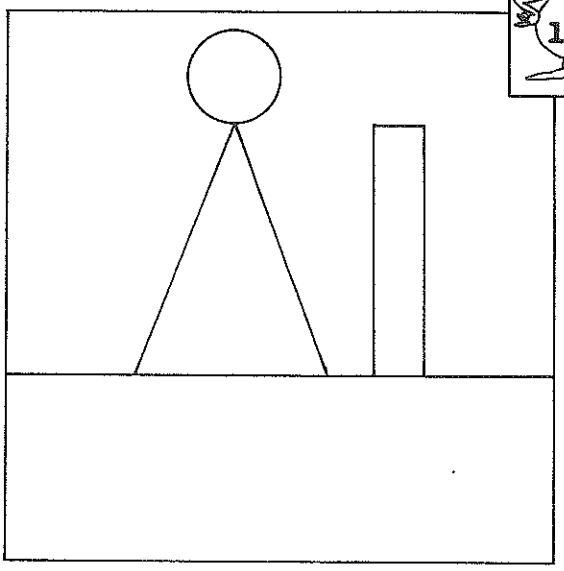
$2 \times 3 - 5 \times m$ = **Q**

$6ab - 7ab + 3ab$ = **G**

2ab	5b	2m − 21	5b	2m − 21	7a	5c
7ab	5c	6m	2m − 21	3b	5c	2m − 21	2m − 21	5c	10c
5ab	5b	5ab	7a	6 − 5m	7ab	5c
3a + 3	7a	a	2c	7b + 5	6 − 5m	10c



Discover the title of this picture



In the expressions below expand the brackets, and where possible, simplify to find the puzzle answer code.

c $= 3(2a - 4)$

$=$

e $= 2(b + 5)$

$=$

g $= 5(a - 2) - 2a + 13$

$=$

h $= 2(a + 2b) + 3(a - b)$

$=$

i $= 6(2a + 7) - 35$

$=$

k $= 3(3b - 2) + 2(b + 5)$

$=$

l $= 10c + 5 + 3(2c - 2)$

$=$

n $= 5(b + 2) - 2b - 6$

$=$

o $= 7(3 + 2c) - 12$

$=$

r $= 7(a - 2)$

$=$

s $= 3(b + 4) + 2(2b - 9)$

$=$

t $= 8c + 2(6 - 3c) - 7$

$=$

w $= 8(c + 3) + 3(4 + 2c)$

$=$

$2c + 5$	$5a + b$	$2b + 10$	$6a - 12$	$16c - 1$	$14c + 9$	$20c + 36$	$3b + 4$

$7b - 6$	$3b + 4$	$14c + 9$	$7a - 14$	$11b + 4$	$2b + 10$	$16c - 1$	$12a + 7$	$3b + 4$	$3a + 3$

Why were the cricket team players given gas lighters?

Expand the brackets and simplify each expression to find the puzzle code.

s $= 6a - 2(3a - 4)$
$=$

a $= 3(c + 2) - 2(c + 4)$
$=$

o $= 5(3 - 2b) - 2(4 - 7b)$
$=$

t $= 7(2a - 1) - 9a$
$=$

b $= -4(2 - e)$
$=$

i $= 16 - 5(b + 3)$
$=$

h $= 5a + 7b - 2(2a + b)$
$=$

e $= 3(a - b + 4) - 2(b + 1)$
$=$

m $= 12(c + 3) - 7(c - 2)$
$=$

y $= 4(3 - 3a) - 5(2 - 3a)$
$=$

c $= 6e - 2(5 + 2e) + 11$
$=$

r $= 7c - 5 - (4c - 6)$
$=$

l $= -(8 - 3a) - (2a - 11)$
$=$

u $= -(3 - 7e)$
$=$

$4e - 8$	$3a - 5b + 10$	$2e + 1$	$c - 2$	$7e - 3$	8	$3a - 5b + 10$	$5a - 7$	$a + 5b$	
$3a - 5b + 10$	$3a + 2$	$a + 3$	$4b + 7$	8	$5a - 7$	$c - 2$	$a + 3$	$a + 3$	$5a - 7$	$a + 5b$
$3a - 5b + 10$	$1 - 5b$	$3c + 1$	$5c + 50$	$c - 2$	$5a - 7$	$2e + 1$	$a + 5b$	$3a - 5b + 10$	8

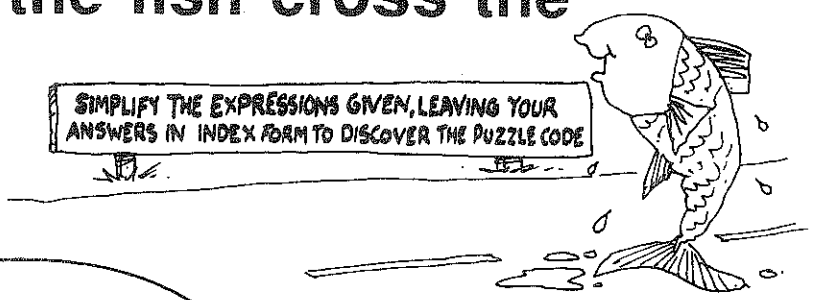
What did Santa's wife say during the storm?

Simplify the expressions given, leaving your answer in index form.
Each answer and letter beside the question gives the puzzle code.

b^8	a^{11}	a^8	$18a^6b^5$	e^6	a^7	$10b^5$	$12a^4b^9$	$18a^6b^5$	$18a^6b^5$
a^7b^7	$6b^{14}$	$18a^6b^5$	$15e^4$	e^6	$6e^7$	a^7	$10b^5$	$18a^6b^5$	e^6	$15e^4$	!

$e \times e \times e \times e \times e \times e$ a =	$a^6 \times a^5$ = o
$b \times b^3 \times b^4$ c =	$a^3b \times a^4b^6$ = t
$2e^5 \times 3e^2$ i =	$a^4 \times a \times a^2$ = n
$5b^3 \times 2b \times b$ d =	$2b^4 \times 3a^5 \times 3ab$ = e
$a \times a \times a^3 \times a \times a^2$ m =	$3e^2 \times 5e \times e$ = r
$2b^5 \times b^6 \times 3b^3$ h =	$2ab \times 3a^3 \times 2b^8$ = s

Why did the fish cross the road?



A $8a^6 \div a^4$ =

N $3ab^3 \div a$ =

D $6c^4 \div 3c$ =

O $\frac{10a^{10}}{2a^3}$ =

E $\frac{18e^3f^2}{9e^2f}$ =

R $b^{16} \div b^7$ =

G $\frac{6a^{12}}{3a^8} \times 2a^5$ =

T $\frac{32e^7f^6}{8e^5f^5}$ =

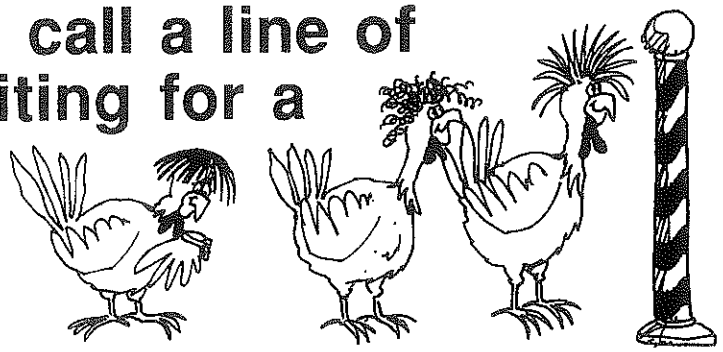
H $24c^{18} \div 4c^7$ =

I $\frac{36b^6 \times b^3}{9b^5 \times 2b^4}$ =

W $\frac{c \times c \times c \times c \times c}{c \times c \times c}$ =

$6c^{11}$	2ef	c^2	$8a^2$	$3b^3$	$4e^2f$	2ef	$2c^3$	$4e^2f$	$5a^7$	$4a^9$	2ef	$4e^2f$
$4e^2f$	$5a^7$	$4e^2f$	$6c^{11}$	2ef	$5a^7$	$4e^2f$	$6c^{11}$	2ef	b^9	$4e^2f$	$2b^2$	$2c^3$	2ef

What do you call a line of chickens waiting for a haircut?

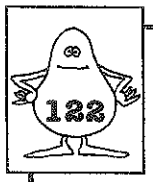


Join the dot beside each question to the dot next to its answer to find the code.

$5x^\circ =$	3
$12 - 9b^\circ =$	2
$a^\circ c^2 b^\circ =$	7
$21e^3 \div 3e^3 =$	1
$15 - 7y^\circ + 1 =$	8n
$\frac{24mn^2p}{3mnp} =$	5
$4a^\circ + 7b^\circ =$	$6f^2$
$\frac{-8e^\circ}{-4u^\circ} =$	11
$12f^7a \div 2f^5a =$	c^2
$2a^\circ + 3b^\circ - 4c^\circ =$	4f
$8x^5f \div 2x^5 =$	9

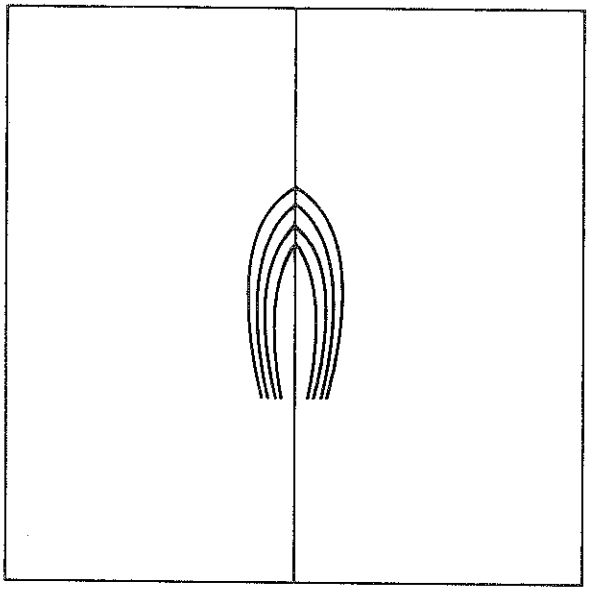
5 K 3 7 N A E R 1 9 H Q 4 I U 11 8 6 10 2 C B

1	2	3	4	2	5	6	7	8	1	9	8	6	9	10	11	6	11	6



Find the title!

EXPAND THE BRACKETS FOUND BELOW. JOIN THE DOT NEXT TO EACH QUESTION TO THE DOT NEXT TO ITS ANSWER FOUND SOMEWHERE ON THE PAGE. EACH LINE PASSES THROUGH A NUMBER AND LETTER GIVING THE PUZZLE ANSWER CODE.



1	2	3	4	5	4	6	7	8	9	10	11
12	4	6	12	13	14	5	15	2	2	3	

$(e^3)^4$ $5(b^1)^6$ $(c^7)^3$ $2(e^2)^3$ $(a^7)^2$

H D 10 I E

$4e^{10}$ $8b^{12}$

$(a^5)^3$ a^{15} 3

15 11

1 K N

$5b^6$ b^9 1 $(2e^5)^2$

$4a^4$

5 S L

2

$25c^4$ 2

$2(c^0)^{15}$ 8 C 14 6

e^{16}

$2e^6$ 9 U $(a^3)^0$

R

$(b^5)^4$ 13 B b^{20}

0 12

7 4 e^{12} T

A

c^{21} a^{14}

$(e^2)^8$ $(2a^2)^2$ $(b^3)^3$ $(5c^2)^2$ $(2b^4)^3$

Hole found in field

Expand the brackets and simplify the expressions. Each answer and the letter beside the question gives the puzzle answer code.

$2(3x + 1) + 4(x - 2)$

$=$
$=$

A

$5(3 - y) + 3(2y - 4)$

C $=$
$=$

$7(e - 5) + e(e - 6)$

$=$
$=$

L

$x(x + 6) - 3(x + 6)$

G $=$
$=$

$-3(4 - 2y) + 5(y + 3)$

$=$
$=$

E

$7(2e - 3) - (8e - 9)$

P $=$
$=$

$x^2(x - 3) + 2x(x - 1)$

$=$
$=$

T

$y^2(3 - y) + 3(1 - y^2)$

R $=$
$=$

$2(e + 1) - 3(e + 2) + 4(e + 3)$

$=$
$=$

O

$16(2x - 3) - 3(10x - 17)$

N $=$
$=$

$-3(y + 2) - (5 - 6y)$

$=$
$=$

K

$2e(e + 3) - e(e + 6)$

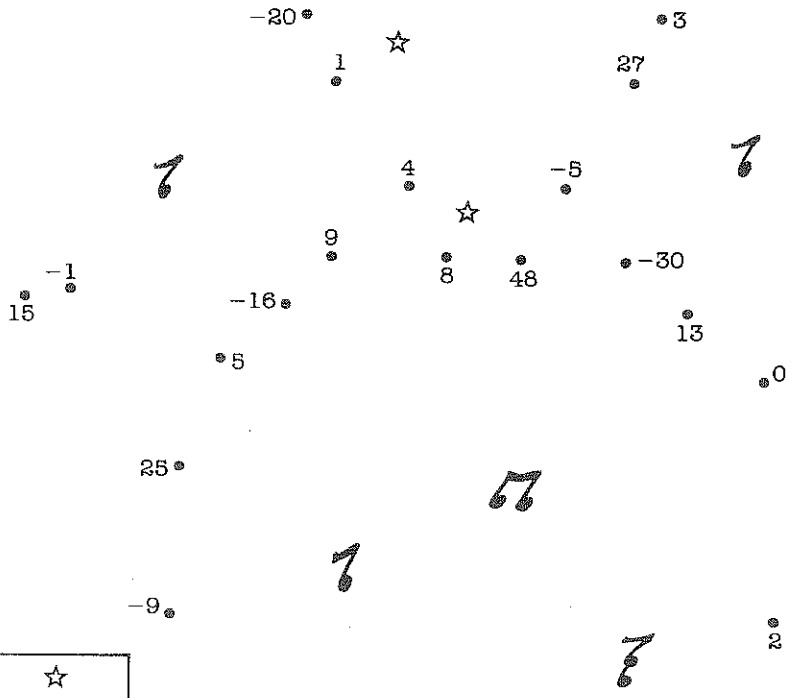
I $=$
$=$

$6e - 12$	$3e + 8$	$e^2 + e - 35$	e^2	$y + 3$	$11y + 3$	$10x - 6$
$-y^3 + 3$	$11y + 3$	$e^2 + e - 35$	$3e + 8$	$3e + 8$	$3y - 11$	e^2
$2x + 3$	$x^2 + 3x - 18$	e^2	$2x + 3$	$x^3 - x^2 - 2x$	$3e + 8$	e^2	$x^3 - x^2 - 2x$

Give a little whistle!

Find the value of the expressions below. Locate the dot next to each answer and join them in the order given in each block. Start a new line for each block of expressions.

☆ COLOUR BLACK

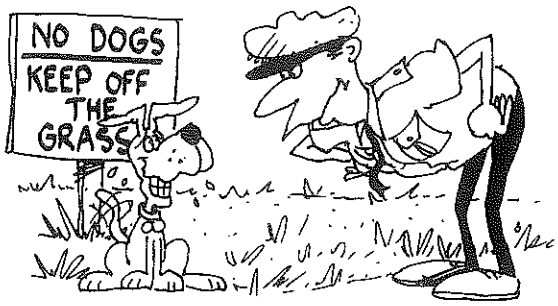


$5a - 7 =$
$3b - 4c =$
$e^2 - 3f =$
$abc =$
$f^2 \div a =$
$7c + 5b =$
$\frac{bf}{2a} =$
$30 - 3ac =$
$(4a - b)^2 =$
$a(c - b) =$

$b - af =$
$-f^2 =$
$(bc - 2af)^3 =$
$3c^2 =$

$a = 2$ $\quad b = 5$
$c = -3$ $\quad e = 1$
$f = -4$

$2bf + 20 =$
$-c =$
$4(af + 8) =$
$27e - b^2 =$
$3(a + e) - 18 =$
$5 - bf =$
$7(b + c) + 1 =$
$-(e - a)^2 =$
$a + b + c + e =$
$af - 2b - 2 =$
$b + f =$



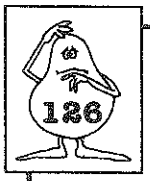
What is out of bounds?

Simplify the expressions below. The answer to each and the letter beside it gives the puzzle answer code.

$\frac{4a}{b} \times \frac{b}{2} =$ A	$\frac{12b^2}{5a} \times \frac{a^2}{6b}$ $=$ D
$\frac{6e}{f} \times \frac{f}{2e} =$ E	$\frac{20a^2}{3} \div \frac{10a}{9}$ $=$ G
$\frac{15ac}{4} \div \frac{5a}{2}$ $=$ I	$\frac{7a^2b}{6c} \times \frac{3c^2}{14ab}$ $=$ K
$\frac{3}{a} \times \frac{b}{6} \times \frac{4a}{1}$ $=$ N	$\frac{20e^2b^3}{3a} \div \frac{5eb^2}{6a^2}$ $=$ O
$\frac{14a^3b}{2} \times \frac{4}{7ab}$ $=$ R	$2b \div \frac{1}{5ab}$ $=$ T

$2a$	$10ab^2$	$\frac{3c}{2}$	$4a^2$	3	$\frac{2ab}{5}$		
$\frac{ac}{4}$	$2a$	$2b$	$6a$	$2a$	$4a^2$	$8abe$	$8abe$

!



What happened when the dog went into the flea circus?

Simplify the expressions below to find the puzzle answer code.

$\frac{5x+2}{6}$	$\frac{3e+4}{4}$	$\frac{3e+4}{4}$	$\frac{5x+2}{6}$	$\frac{13a-4}{24}$	$\frac{24a+35}{10}$
$-2\frac{1}{6}$	$-2\frac{1}{6}$	$\frac{24a+35}{10}$	$\frac{4e+1}{4}$	$-2\frac{1}{6}$	$\frac{5x+4}{6}$

A $\frac{x}{2}+\frac{x+1}{3}$ =

D $\frac{e-2}{4}+\frac{3+e}{2}$ =

E $\frac{6a+7}{2}-\frac{3a}{5}$ =

G $\frac{e+3}{4}+\frac{e+5}{3}$ =

H $x+2+\frac{x-3}{2}$ =

K $\frac{5x}{4}-\frac{2x}{3}$ =

L $\frac{a}{8}+\frac{5a-2}{12}$ =

N $\frac{3a+1}{4}+\frac{5-6a}{8}$ =

O $\frac{4x+5}{3}-\frac{x+2}{2}$ =

R $\frac{3}{4}+\frac{2e-1}{2}$ =

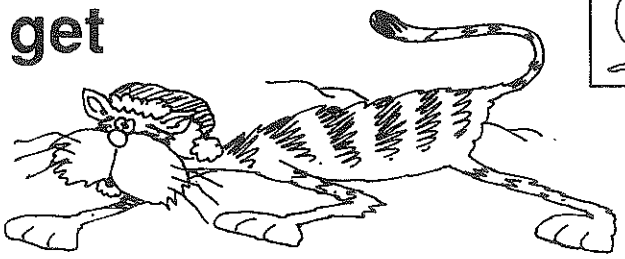
S $\frac{2a}{3}+\frac{3a}{4}+\frac{5a}{2}$ =

T $\frac{2x-3}{6}-\frac{x+5}{3}$ =

V $\frac{6e+1}{2}+\frac{3e+2}{6}$ =

$\frac{3x+1}{2}$	$\frac{47a}{12}$	$\frac{4e+1}{4}$	$\frac{47a}{12}$	$\frac{7}{8}$	$\frac{7x}{12}$	$\frac{3e+4}{4}$
$\frac{47a}{12}$	$\frac{7e+29}{12}$	$\frac{3e+4}{4}$	$\frac{4e+1}{4}$	$\frac{7e+29}{12}$	$\frac{7}{8}$	$\frac{21e+5}{6}$

What did the cat get when it crossed the desert on Christmas Eve?



Solve the equations and locate the answer on the number line. The letter at that position and the question number gives the puzzle code.

Number line

I	10
R	9
C	8
O	7
Y	6
D	5
S	4
G	3
A	2
K	1
L	0
T	−1
M	−2
B	−3
P	−4
F	−5
U	−6
N	−7
E	−8
W	−9
H	−10

1 $x + 7 = 11$

2 $13x = 26$

3 $x + 8 = 1$

4 $4x = 20$

5 $\frac{x}{2} = 3$

6 $c - 12 = -4$

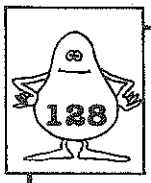
7 $x + 5 = 5$

8 $\frac{x}{2} = 1$

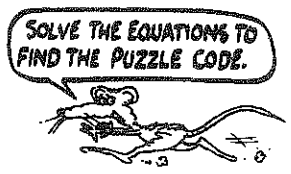
9 $3x = -27$

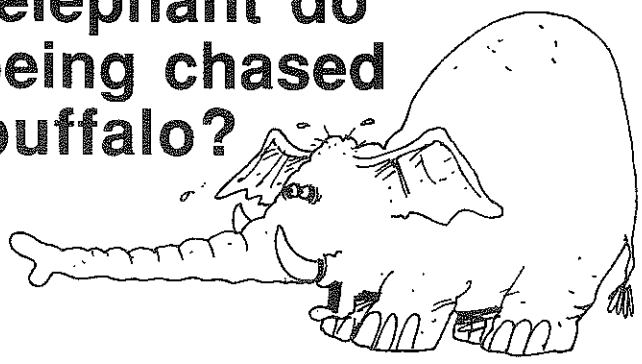
10 $x - 7 = -3$

1	2	3	4	5	6	7	8	9	10



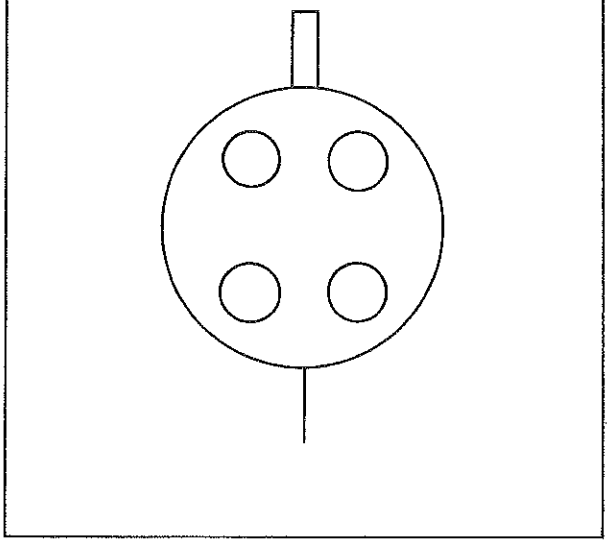
What did the elephant do when it was being chased by a herd of buffalo?



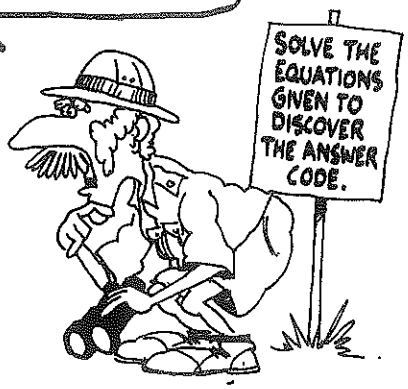


$2a - 3 = 7$ $a =$	$\frac{c+2}{3} = 3$ $c =$	$d \div 2 + 3 = 5$ $d =$
$2(e - 5) = 14$ $e =$	$5g + 8 = 13$ $g =$	$\frac{h}{4} + 6 = 10$ $h =$
$7 + 3k = 25$ $k =$	$\frac{6+L}{3} = 5$ $L =$	$11m - 22 = 0$ $m =$
$-6n = -18$ $n =$	$3r - 24 = 0$ $r =$	$13 + S \div 2 = 18$ $s =$
$3t - 21 = 12$ $t =$	$6u + 15 = 3$ $u =$	$\frac{v-5}{2} = -5$ $v =$

16	12	2	5	4	12	5	11	8	−2	3	6	7	5	9	9	5	3	4
8	12	−5	12	8	10	12	4	11	16	12	7	16	5	8	1	12		



WHAT'S THIS?



$\frac{2a + 7}{13} = 1$

a =

$8(6n - 4) - 20 = -4$

n =

$2(\frac{d}{3} + 6) = 20$

d =

$\frac{h - 4}{2} + 4 = 7$

h =

$4(3t - 7) = -52$

t =

$6(e + 8) - 3 = 9$

e =

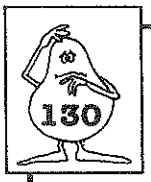
$(\frac{L}{4} + 7) \div 5 = 1$

L =

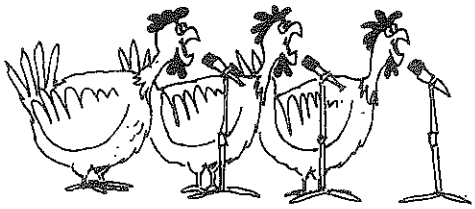
$9 = \frac{5p - 7}{2}$

p =

3	12	−6	3	12	−6	−8	−6	5	10	3	1	−2



What do you call a band of musical chickens?



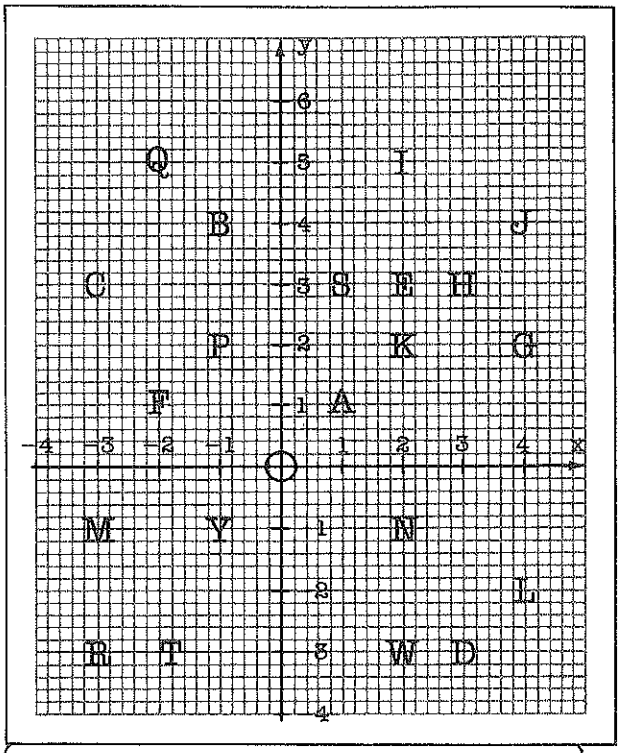
Solve the equations to discover the puzzle answer code.

$5a + 7 = 8a - 2$ **a** =	$3c - 2 = c - 10$ **c** =
$2(e + 3) = e + 5$ **e** =	$12 + 2h - 3 = 5h + 1 + h$ **h** =
$-2q + 3 = 8q - 7$ **q** =	$3(r - 2) = 5(r + 4)$ **r** =
$8(3 - t) + 4 = 2(t - 6)$ **t** =	$3(5 - 2s) = s - 20$ **s** =
$9u + 3 = 91 - 2u$ **u** =	$7(2w - 3) = 11(w + 3)$ **w** =

3	5	1	8	3	18	−4	2	−1	5	4	−13	3

!

Why did the candle-makers go on strike?



Complete the table of values for each equation given below. Plot the points on the graph, and complete the straight line for each equation. Number the lines with the number next to each equation.
The letter appearing where two numbered lines cross gives the puzzle code.

(1) $y = x$

x	−4	−3	−2	−1	0	1	2	3	4
y									

(2) $y = 3$

x	−4	−3	−2	−1	0	1	2	3	4
y									

(3) $y = 2x + 1$

x	−4	−3	−2	−1	0	1	2	3	4
y									

(4) $y = -x$

x	−4	−3	−2	−1	0	1	2	3	4
y									

(5) $y = 3 - 2x$

x	−4	−3	−2	−1	0	1	2	3	4
y									

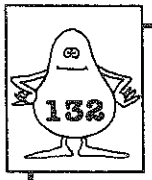
(6) $y = -3$

x	−4	−3	−2	−1	0	1	2	3	4
y									

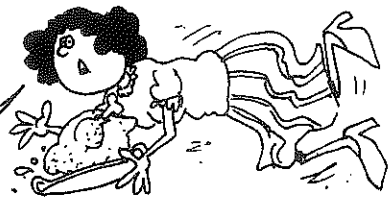
(7) $x = 2$

x									
y	−3	−2	−1	0	1	2	3	4	5

(3) & (6)	(1) & (2)	(2) & (7)	(1) & (3)	(4) & (5)	(3) & (7)	(4) & (5)
(5) & (7)	(3) & (6)	(6) & (7)	(1) & (5)	(5) & (7)	(3) & (6)	(3) & (6)
(1) & (4)	(6) & (7)	(1) & (4)	(1) & (6)	(1) & (7)	(1) & (4)	(5) & (7)
(6) & (7)	(3) & (7)	(2) & (4)	(1) & (7)	(2) & (7)	(5) & (7)	(4) & (5)	(2) & (3)



What would happen if Mum dropped the Christmas dinner?

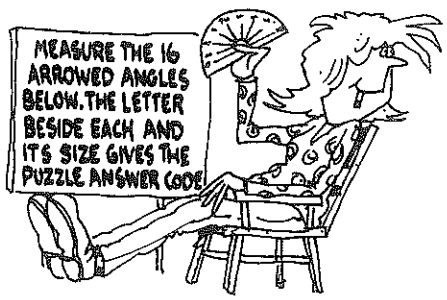


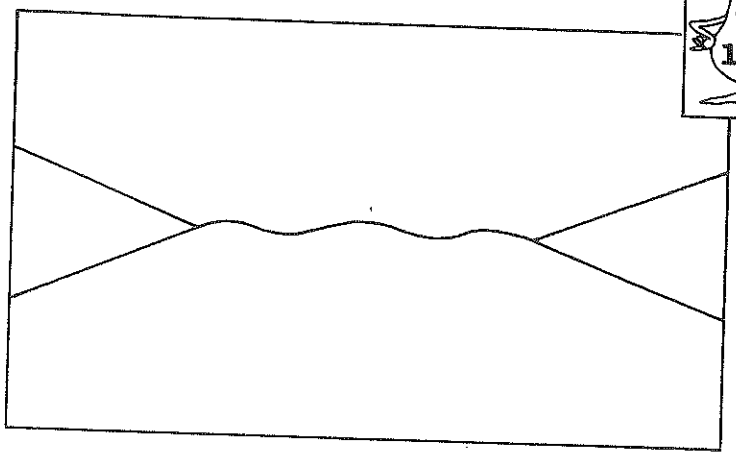
Solve the inequations given. The letter next to each question and the answer gives the puzzle answer code.

$2x + 1 > 3$ **a**	$\frac{x-7}{3} \leqslant 2$ **c**	$3(x-2) > 9$ **d**
$7 + 5x \geqslant 22$ **e**	$3x + 5 < 20$ **f**	$\frac{x}{2} + 6 \geqslant 11$ **g**
$\frac{12+x}{5} < 4$ **h**	$\frac{4x}{7} \leqslant 8$ **i**	$2(5 + x) > 42$ **k**
$\frac{x-2}{7} < 3$ **l**	$15 + \frac{x}{4} \geqslant 20$ **n**	$4 - 2x > 0$ **o**
$6(5 + 2x) > 18$ **r**	$3x + 4 \leqslant -5$ **s**	$\frac{-2x}{3} \leqslant 8$ **t**
$\frac{x+3}{11} < 2$ **u**	$-4x \geqslant 8$ **w**	$15x + 3 > 63$ **y**

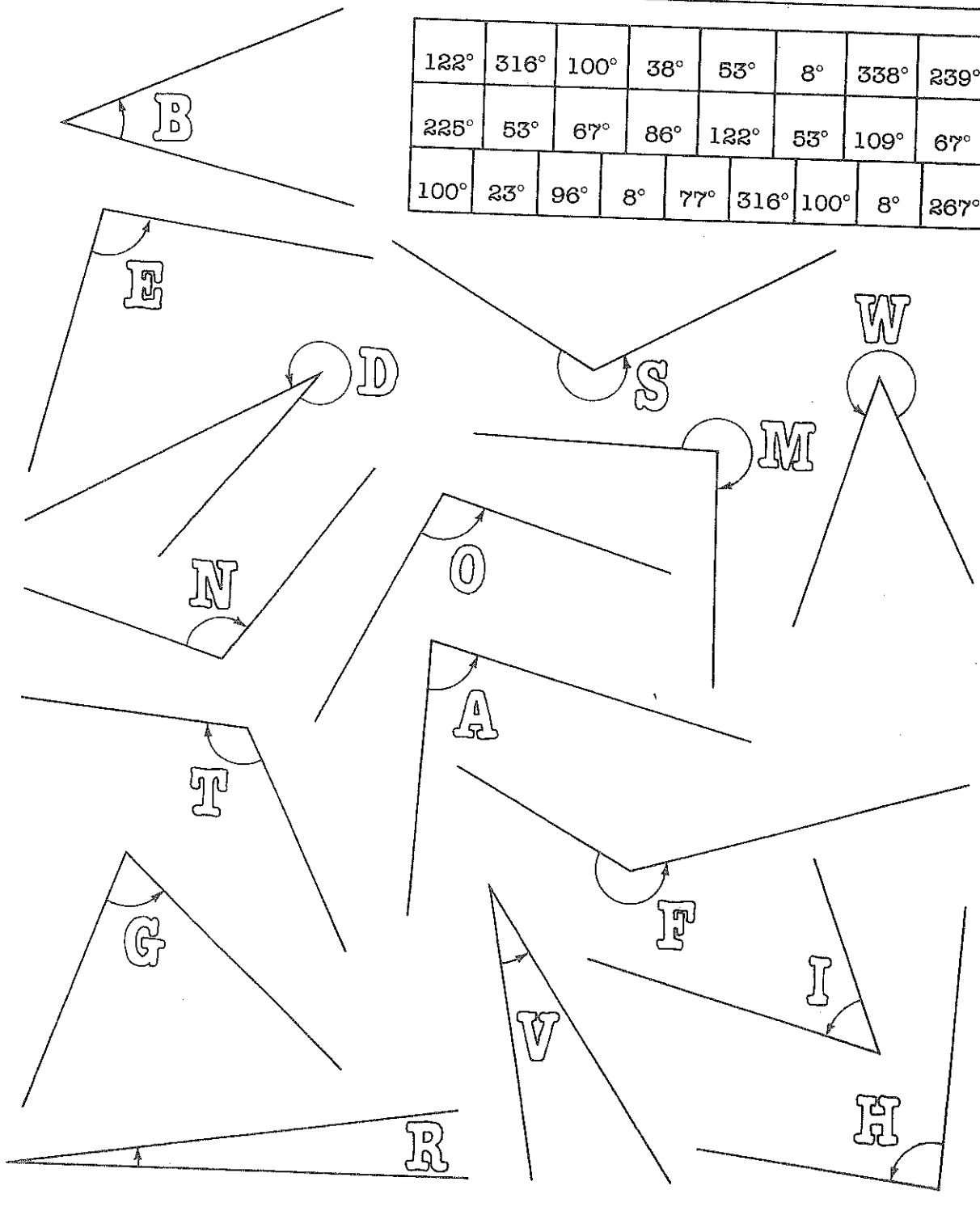
$x \geqslant -12$	$x < 8$	$x \geqslant 3$	$x > 5$	$x < 2$	$x \leqslant -2$	$x \geqslant 20$	$x < 5$	$x > 1$
$x < 23$	$x < 23$	$x < 2$	$x < 5$	$x \geqslant -12$	$x < 19$	$x > -1$	$x > 16$	$x \geqslant 3$
$x > 4$	$x \geqslant -12$	$x < 8$	$x \geqslant 3$	$x < 23$	$x < 2$	$x \leqslant -3$	$x \leqslant -3$	$x < 2$	$x < 5$
$x \geqslant 10$	$x > -1$	$x \geqslant 3$	$x \geqslant 3$	$x \leqslant 13$	$x \geqslant 3$	$x > 1$	$x \geqslant 20$	$x > 5$	$x \geqslant -12$
$x < 8$	$x \geqslant 3$	$x > 5$	$x \geqslant 3$	$x \leqslant -3$	$x \geqslant -12$	$x > -1$	$x < 19$	$x \leqslant 13$	$x \geqslant -12$
$x \leqslant 14$	$x < 2$	$x \geqslant 20$	$x < 2$	$x < 5$	$x \leqslant 13$	$x < 8$	$x \leqslant 14$	$x \geqslant 20$	$x > 1$

Find the picture title!

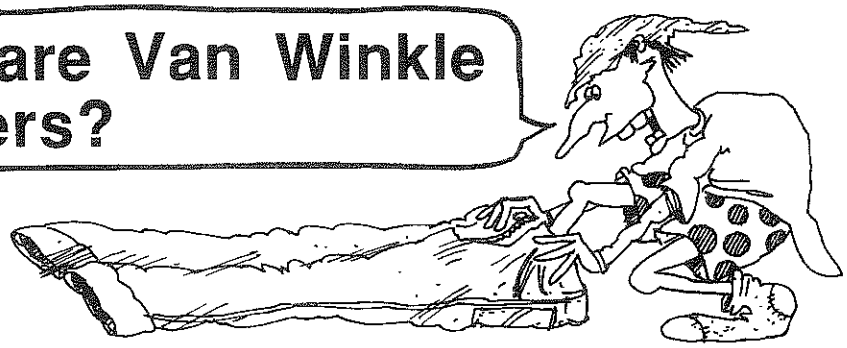




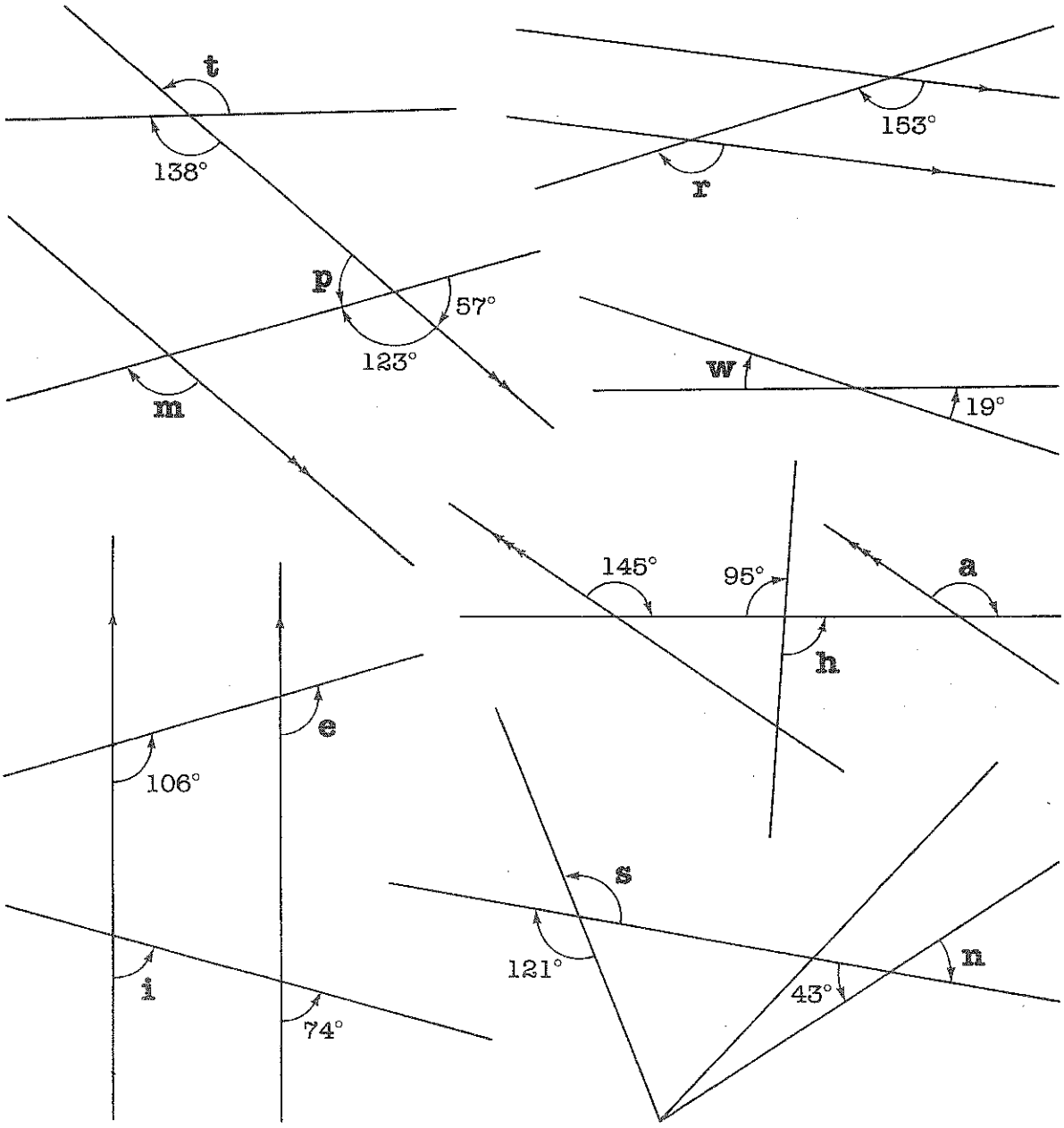
122°	316°	100°	38°	53°	8°	338°	239°
225°	53°	67°	86°	122°	53°	109°	67°
100°	23°	96°	8°	77°	316°	100°	8°	267°



What are Van Winkle trousers?



Determine the values of the lettered angles below. This gives the puzzle answer code.

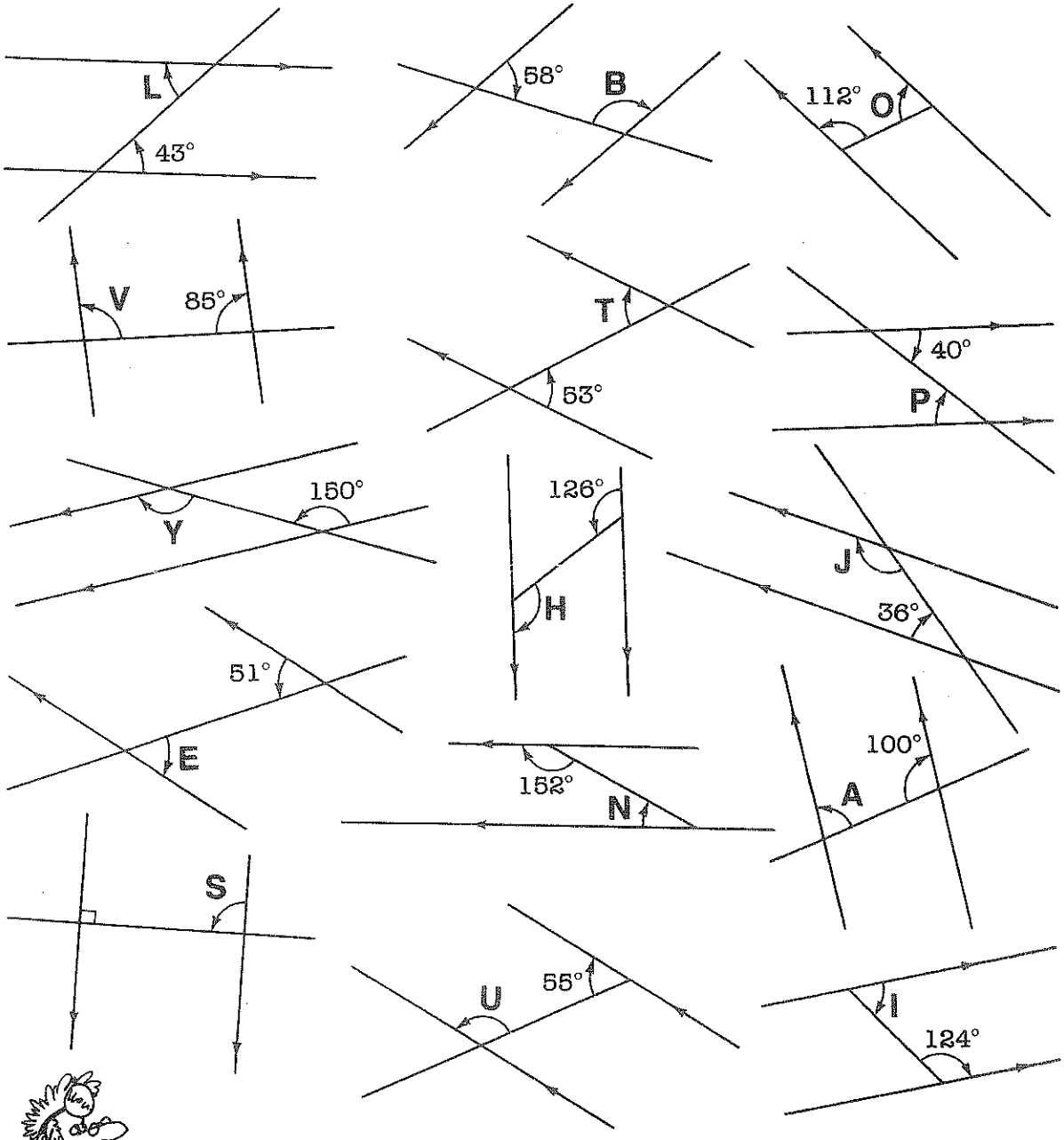


57°	145°	43°	138°	121°	19°	74°	138°	95°

145°	153°	74°	57°	74°	43°	138°	95°	106°	123°

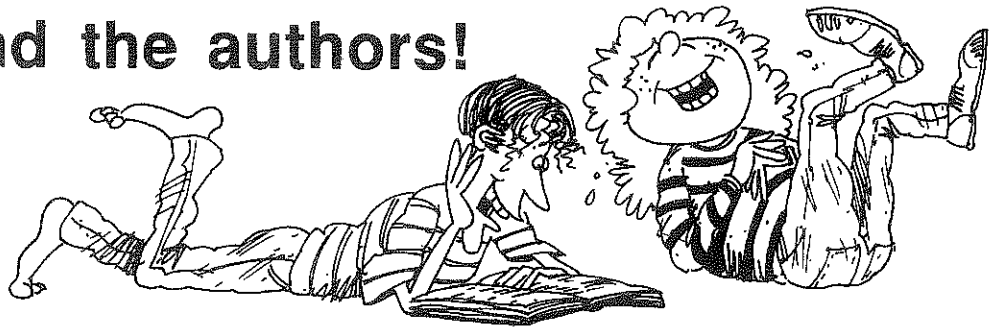
Doctor, I feel like I'm shrinking!

Figure out the size of the lettered angles to discover the puzzle answer code.

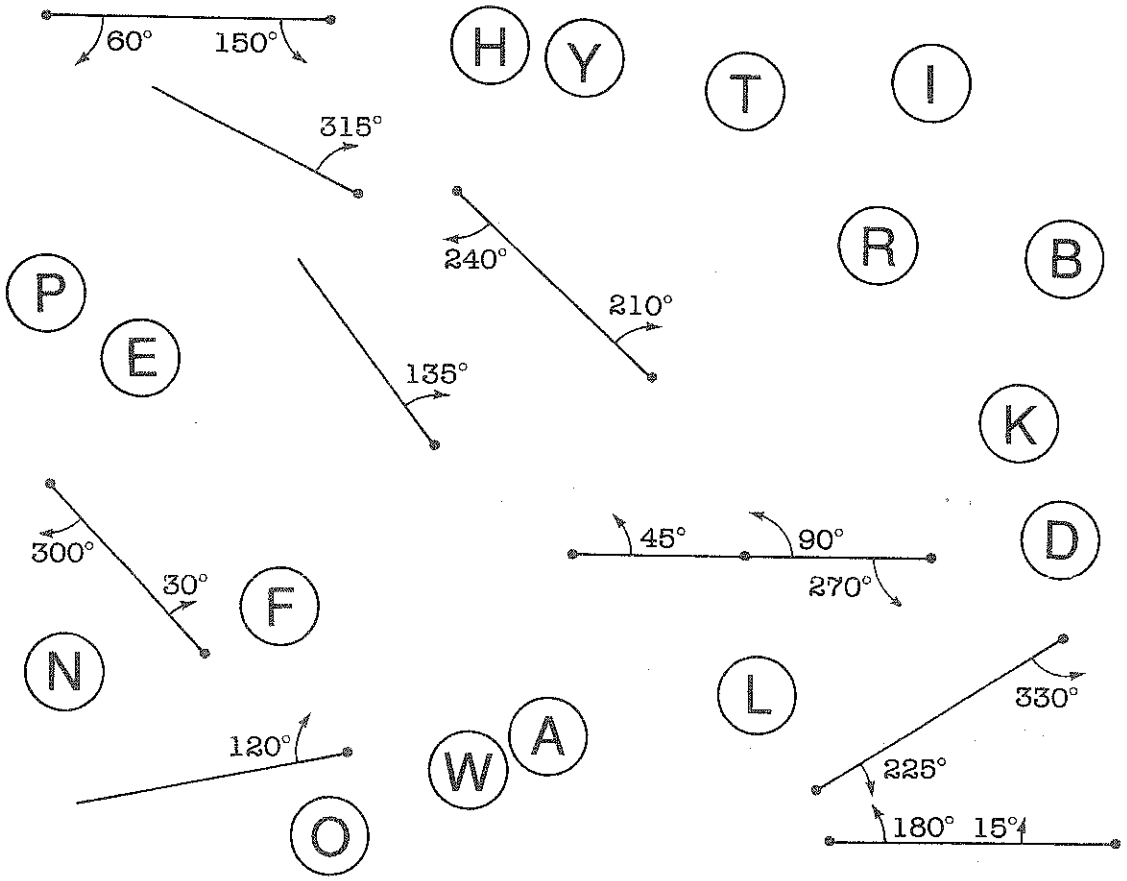


150°	68°	125°	43°	43°	144°	125°	90°	53°	126°	80°	95°	51°	53°	68°
122°	51°	80°	43°	56°	53°	53°	43°	51°	40°	80°	53°	56°	51°	28°	53°

Find the authors!



Use only a pencil, ruler and compass to construct the angles indicated on the arms given. Each new angle arm will pass through a letter, and this with the angle gives the code.

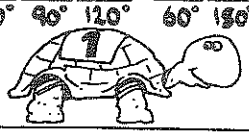


WHAT'S THE ANSWER?
BY

240° 180° 60° 225° 45° 135° 270° 150° 330° 180° 30°

WILL HE WIN?
BY

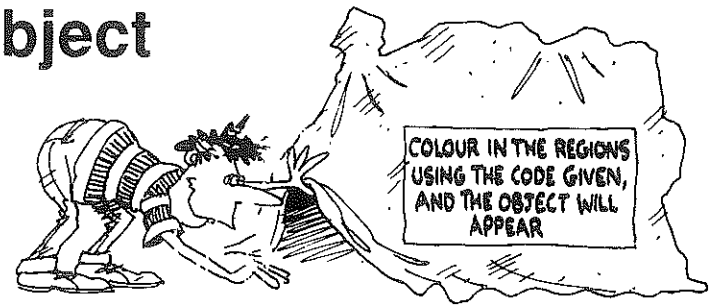
300° 30° 90° 90° 120° 60° 150° 330° 90°



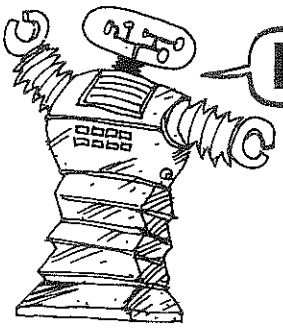
RUSSIAN BARBER
BY

270° 150° 210° 270° 315° 270° 90° 180° 15° 15°

A familiar object

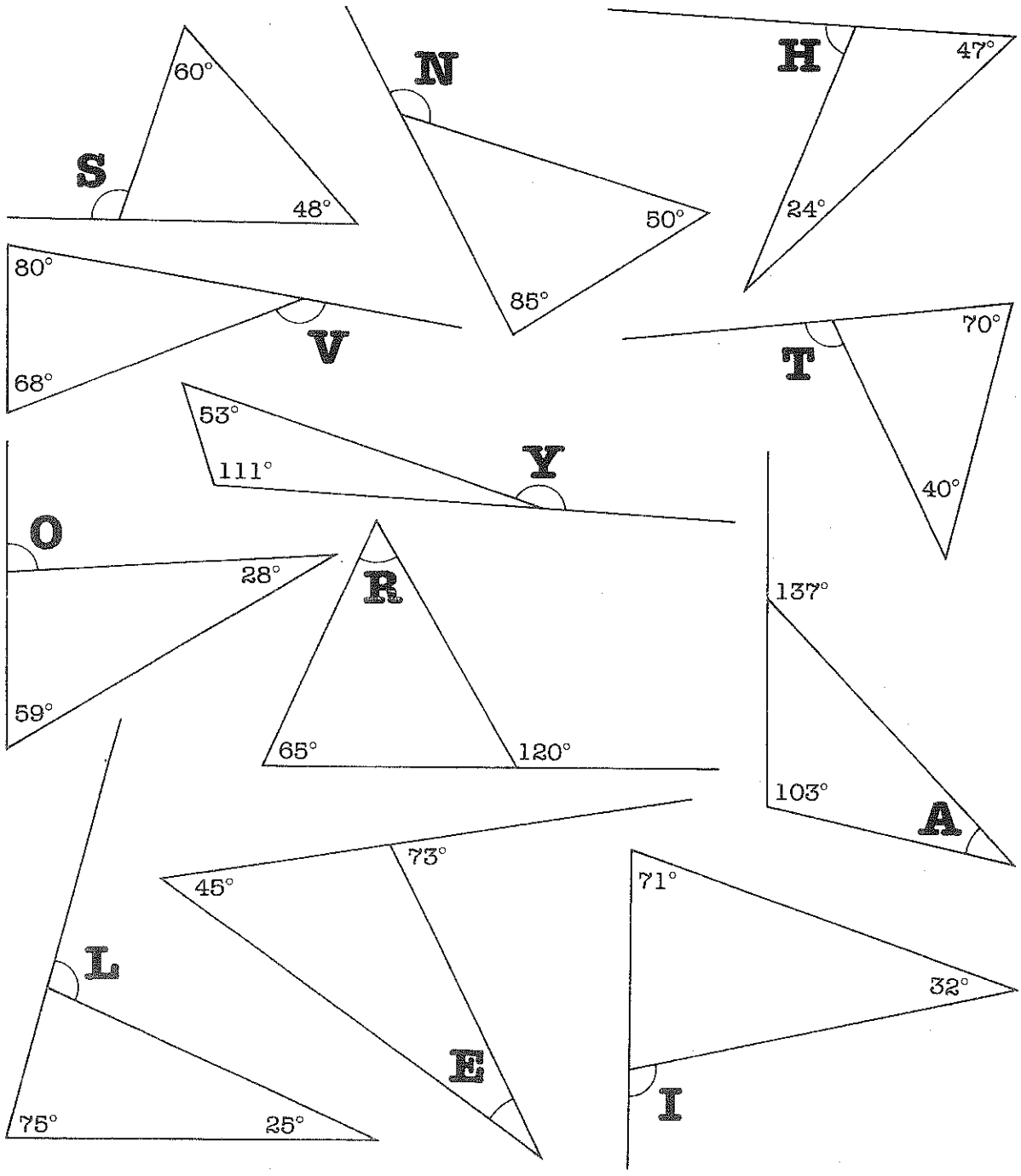


EQUILATERAL TRIANGLES — green
ISOSCELES TRIANGLES — orange
RIGHT-ANGLED ISOSCELES TRIANGLES — brown
SCALENE TRIANGLES — yellow
RIGHT TRIANGLES — blue



Do robots have brothers?

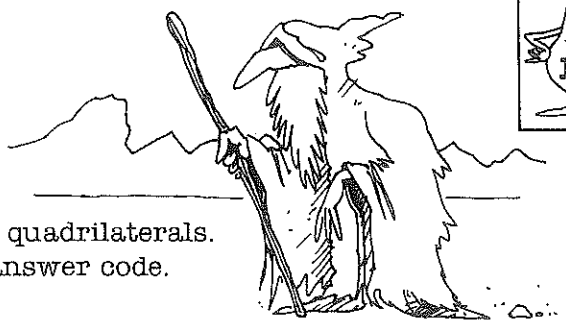
Calculate the size of the lettered angles to find the puzzle code.



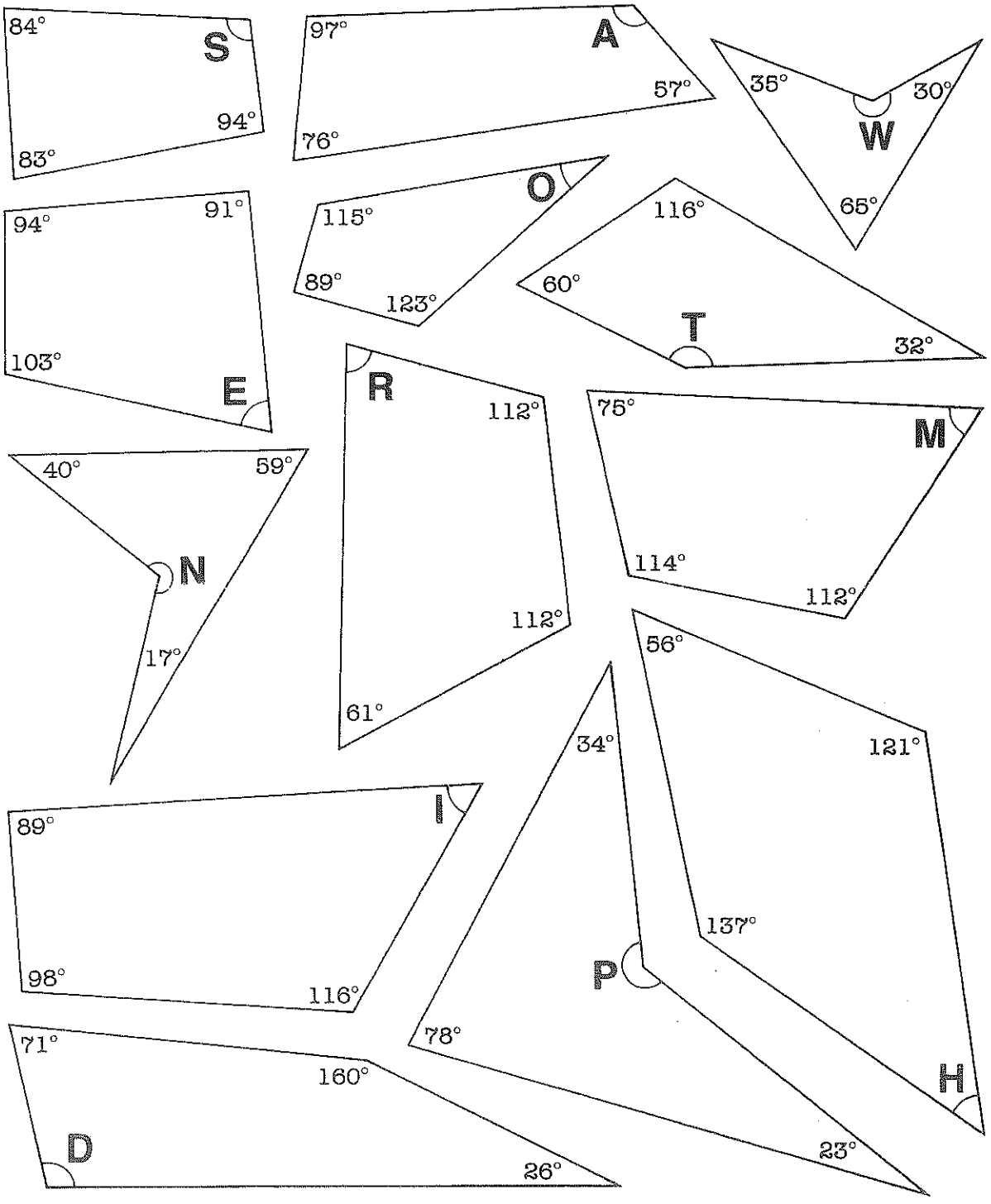
135°	87°	110°	71°	28°	164°	87°	135°	100°	164°

71°	34°	148°	28°	110°	55°	34°	135°	108°	103°	108°	110°	87°	55°	108°

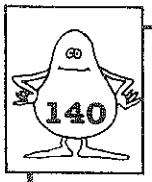
What is a nomad?



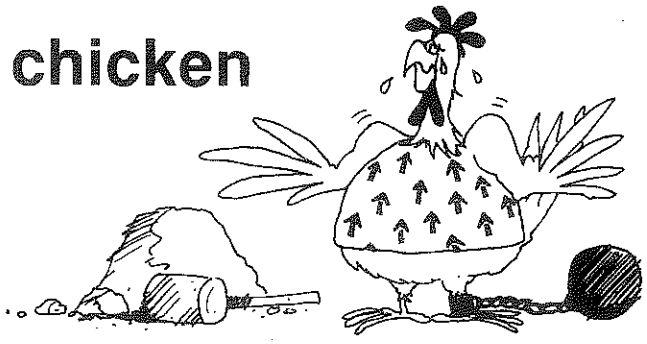
Find the value of the lettered angles in the quadrilaterals.
Each letter and its value gives the puzzle answer code.



130°	225°	72°	75°	99°	33°	244°	230°	46°	33°	57°	99°	244°	152°	59°	130°	103°



Why was the chicken arrested?

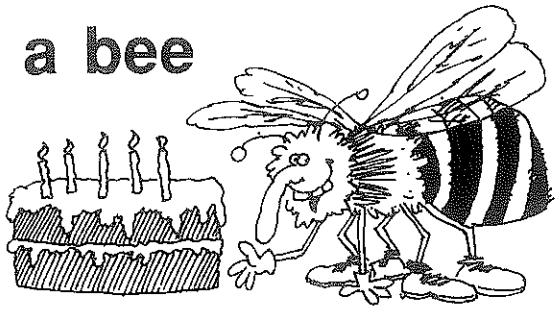


Divide the quantities in the ratios given. The resulting amounts and the two letters following give the puzzle code.

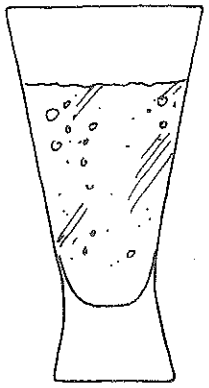
Divide \$96 in the ratio 5 : 7 **A** and **B**	Divide 117 g in the ratio 9 : 4 **E** and **F**	Divide 252 m in the ratio 5 : 16 **G** and **H**
Divide 296 g in the ratio 3 : 5 **J** and **K**	Divide 253 m in the ratio 2 : 9 **L** and **M**	Divide \$112 in the ratio 6 : 1 **O** and **P**
Divide 48 m in the ratio 9 : 7 **R** and **T**	Divide \$420 in the ratio 3 : 17 **T** and **U**	Divide 210 g in the ratio 7 : 8 **V** and **X**

21 m	\$40	185 g	81 g	\$40	46 m	81 g	21 m	\$63	81 g	27 m	\$96	36 g	36 g
111 g	\$357	112 g	\$56	21 m	98 g	\$63	111 g	\$96	192 m				
60 m	\$16	112 g	207 m	207 m	\$56	\$96	192 m	98 g	\$56	192 m	36 g		

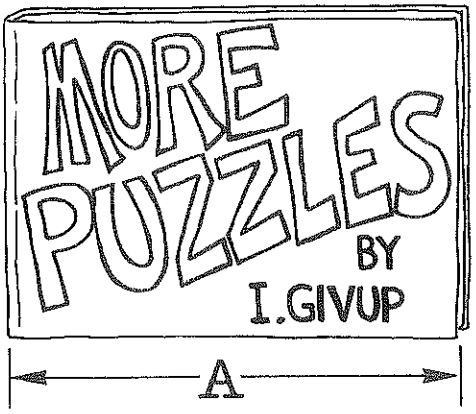
What do you call a bee born in May?



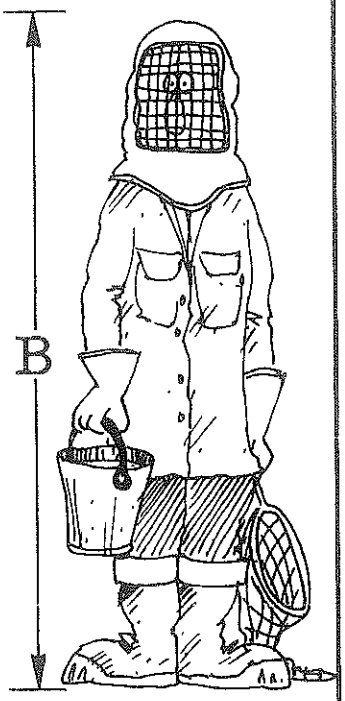
Measure the lettered lengths on the scale drawings, and use the scale to determine the lengths on the actual objects. This gives the puzzle answer code.



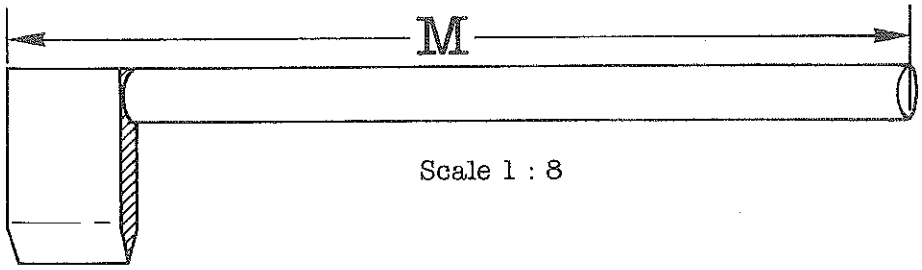
Scale 1 : 3



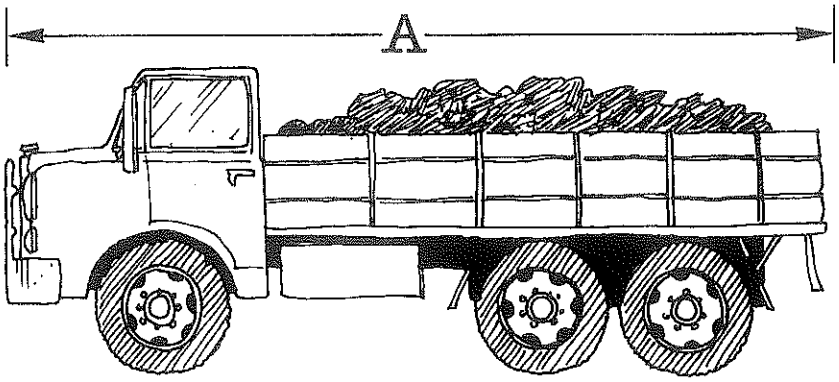
Scale 12 : 1



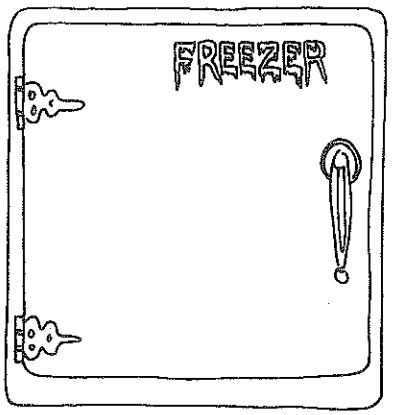
Scale 1 : 20



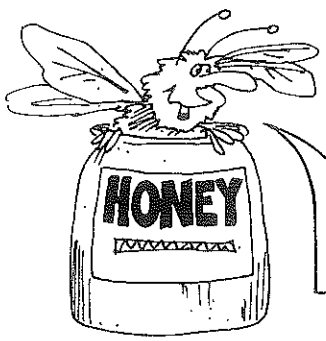
Scale 1 : 8



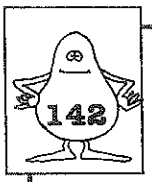
Scale 1:18

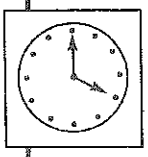


Scale 1 : 25

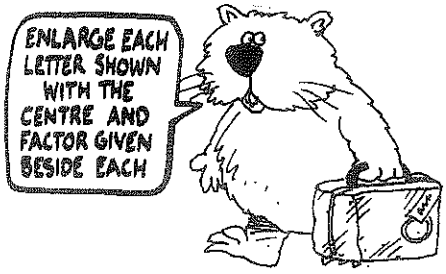


5 mm	96 cm	198 cm	15 cm	180 cm	125 cm



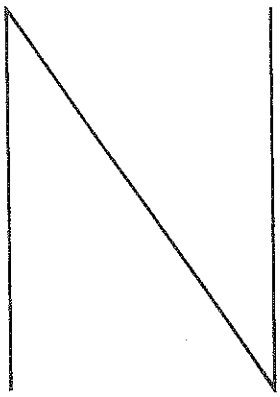


What's brown and carries a suitcase?



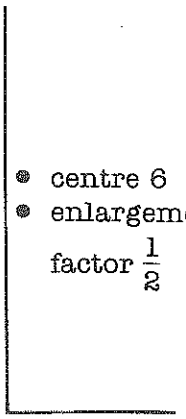
7 •

3 •



- centre 1
- enlargement factor $\frac{1}{2}$

5 •



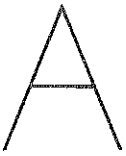
- centre 6
- enlargement factor $\frac{1}{2}$

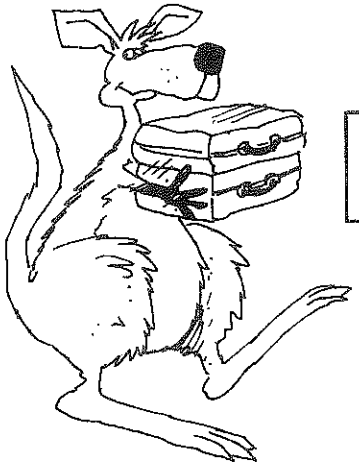
4 •

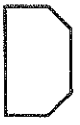
- centre 4
- enlargement factor 3

- centre 5
- enlargement factor 2

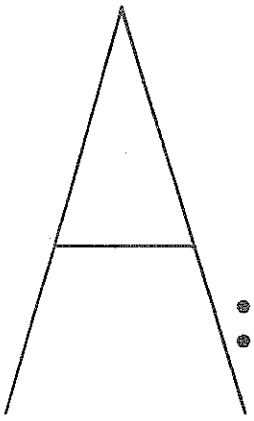
- centre 7
- enlargement factor $1\frac{1}{2}$







- centre 2
- enlargement factor 2



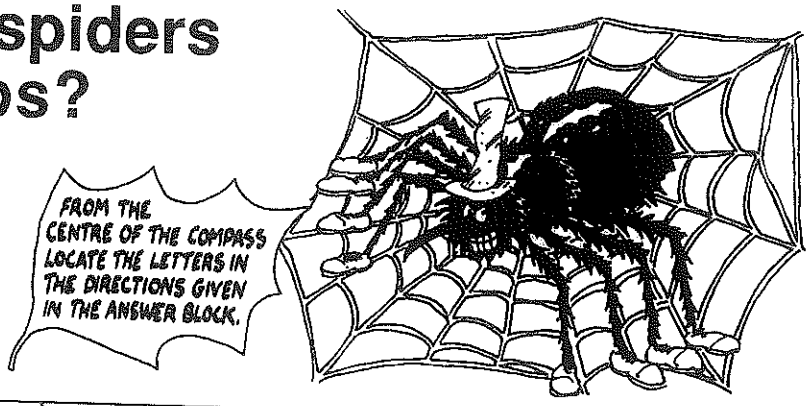
- centre 3
- enlargement factor $\frac{1}{2}$

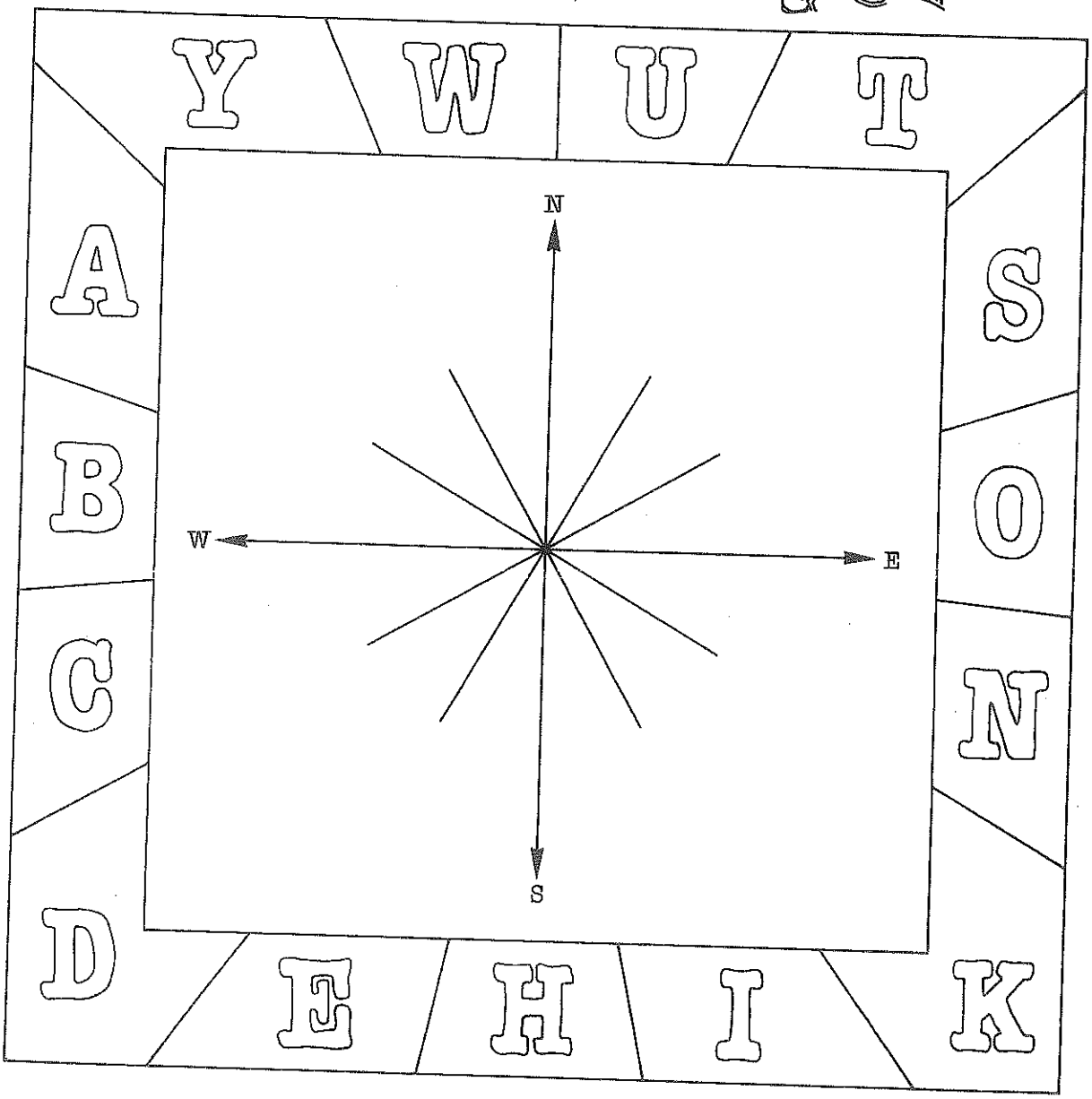
• 1

2 •

• 6

Why do spiders spin webs?





N84°W	S20°W	S71°W	N50°W	N15°E	N66°E	S13°W	N33°E	S3°E	S19°W	N35°W
S47°W	N87°E	S77°E	N41°E	S50°E	S68°E	S88°E	N12°W			
S6°W	N75°E	N21°W	N32°E	N74°E	S55°E	S70°E	S24°E	N41°E		

Why do squirrels spend so much time in trees?

CONVERT THE PERCENTAGES GIVEN TO DECIMALS TO FIND THE PUZZLE ANSWER CODE.

a = 31%
=

g = 92%
=

n = 77%
=

t = 97%
=

c = 320%
=

h = 5%
=

u = 43%
=

d = 85%
=

i = 27%
=

o = 211%
=

v = 377%
=

e = 40%
=

l = 58%
=

r = 500%
=

w = 260%
=

f = 150%
=

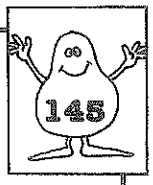
m = 63%
=

s = 120%
=

y = 341%
=

3·2	5	2·11	1·2	1·2	2·11	0·43	0·97	0·4	3·77	0·4	5	3·41
0·97	0·05	0·27	5	0·85	0·58	0·4	0·97	0.97	0·4	5	0·27	0·77
0·97	2·11	3·41	0·92	0·4	0·58	0·97	0·31	2·11	2·6	0·31	3·2	3·41
1·5	0·92	5	2·11	3·41	0·63	0·97	0·31	0·05	0·4	5	0·77	0·43	0·05	0·97	1·2
3·77	2·11	0·77	2·6	0·97	0·05	0·63	0·4	0·92	0·4	5	2·11	3·2	0·43	0·77	0·31	0·85

There's an invisible man waiting to see you

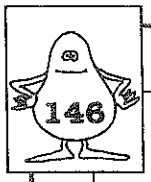


Change the decimals to percentages to find the code.

A = 1·45 =	N = 0·8 =
C = 0·78 =	O = 0·01 =
E = 0·09 =	R = 1 =
G = 0·3 =	S = 0·62 =
H = 2·7 =	T = 2·07 =
I = 4 =	W = 0·12 =
M = 0·25 =	

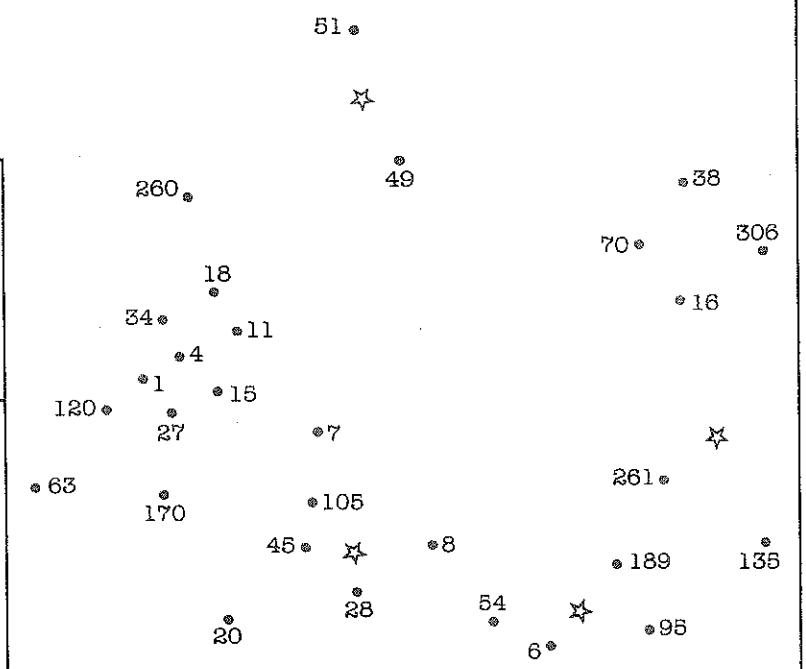
400%	78%	145%	80%	207%	62%	9%	9%

270%	400%	25%	100%	400%	30%	270%	207%	80%	1%	12%



Find the creature

☆ Colour in these regions



Answer the questions. Join the dots found next to the answers in the order given in each block. Start a new line for each new block of questions.

10% of 70 =
35% of 300 =
16% of 50 =
80% of 35 =
150% of 30 =
2% of 1000 =
75% of 84 =

5% of 20 =
90% of 30 =
$33\frac{1}{3}$% of 45 =
$12\frac{1}{2}$% of 88 =
20% of 90 =
17% of 200 =
$2\frac{1}{2}$% of 40 =

65% of 400 =
28% of 175 =
50% of 140 =
95% of 40 =
30% of 170 =
130% of 200 =
120% of 100 =
25% of 252 =
85% of 200 =

40% of 40 =
$33\frac{1}{3}$% of 210 =

50% of 210 =
900% of 5 =

15% of 360 =
63% of 300 =
38% of 250 =
3% of 200 =
20% of 270 =
5% of 400 =

58% of 450 =
27% of 500 =
75% of 408 =
10% of 160 =
50% of 522 =
25% of 756 =

LARGE DOT AT

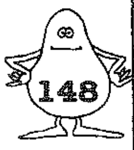
1% of 400 =

Why was the bride unhappy?

Find the whole quantity for the percentages given below.
The whole quantity and the letter next to each gives the code.

E 20% is 35	M 13% is 52	T 25% is 43
D $12\frac{1}{2}$% is 15	R 80% is 44	N 50% is 37
S 35% is 84	B $66\frac{2}{3}$% is 70	I 75% is 36
Y 5% is 13	H 46% is 138	A 44% is 121

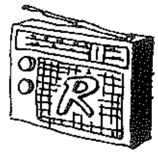
240	300	175	120	48	120	74	172	400	275	55	55	260
172	300	175	105	175	240	172	400	275	74			



Why are elephants wrinkled all over?

The cost price (CP) of a number of items in a store are given together with the percentage profit or loss on cost price for each. Calculate the selling price of each to find the puzzle code.

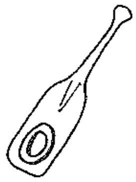
Football $12
Profit 25%



Radio $20
Profit 32%

Clock $17·50
Loss 10%

Electric kettle $40
Profit 35%

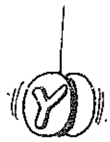


Oars $8
Profit 50%

Umbrella $25
Loss 20%

Ink $5
Profit 60%

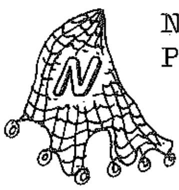
Tennis racquet $70
Profit 30%



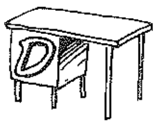
Yo-yo $2·50
Profit 74%

Softball glove $36
Profit 75%

Anchor $60
Profit 80%

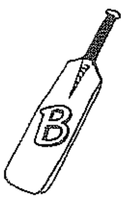


Net $6
Profit 50%

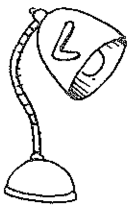


Desk $80
Loss $37\frac{1}{2}$%

Helmet $44
Profit 25%



Bat $140
Loss 21%



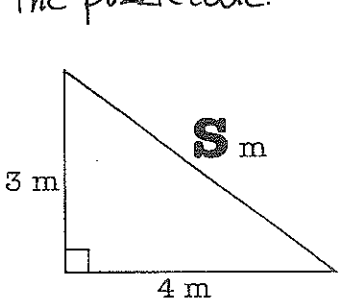
Lamp $20
Profit 5%

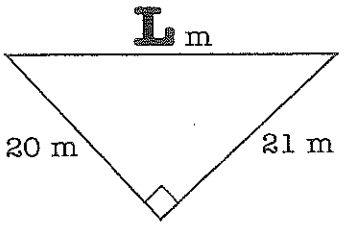
$110·60	$54	$15·75	$108	$20	$63	$54	$91	$55	$54	$4·35	$108	$26·40	$54

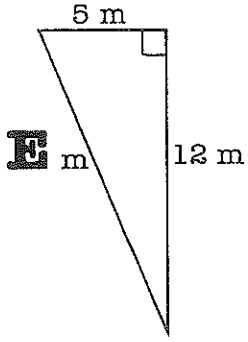
$63	$12	$50	$8	$15	$15	$8	$15·75	$20	$21	$91	$91	$12	$8	$26·40	$12	$9

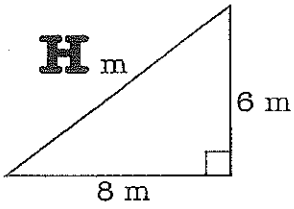
How do the ghosts keep their house?

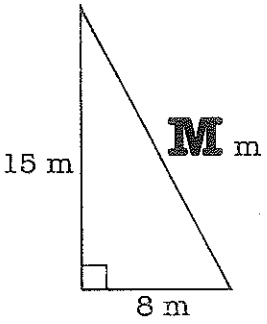
Use Pythagoras' Rule to find the value of the lettered side in each right-angled triangle given. This gives the puzzle code.

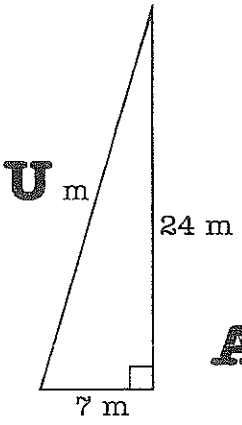


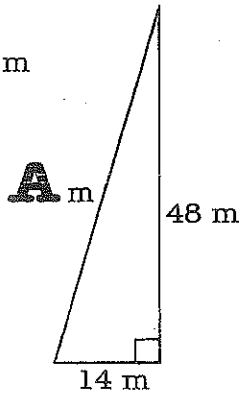


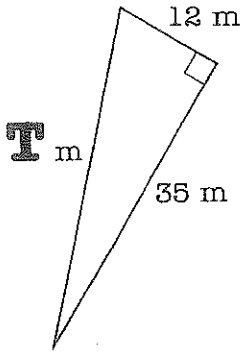


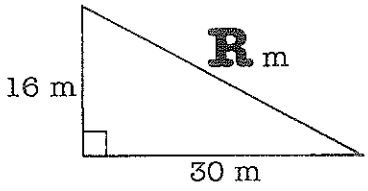


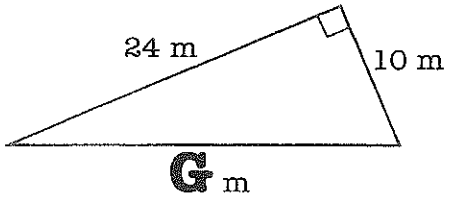


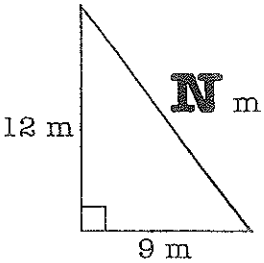


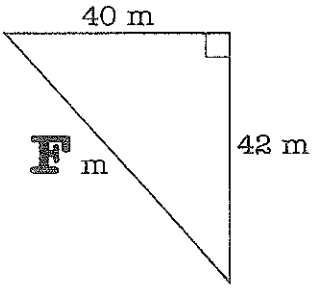


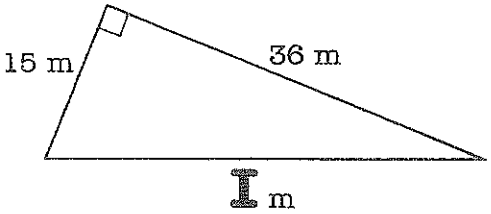




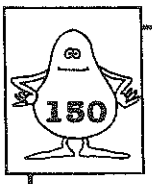




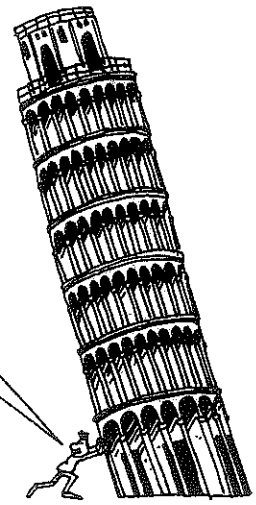




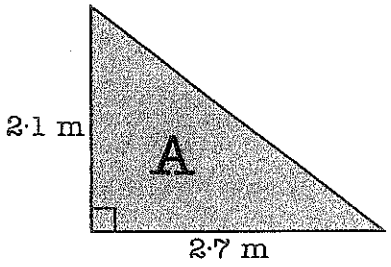
39	15	50	58	34	39	26	10	37	58	25	29	17	13	5	5

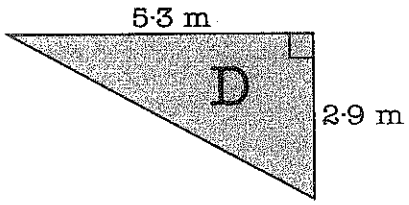


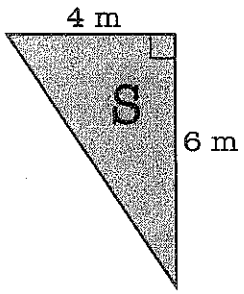
What makes the Tower of Pisa lean?

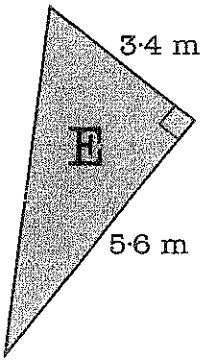


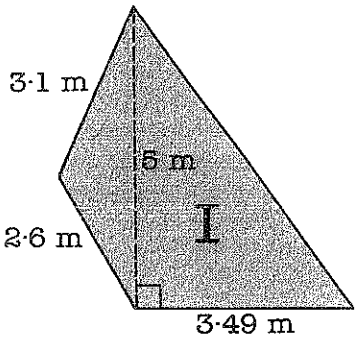
Use Pythagoras' Rule to calculate the length of the hypotenuse to 2 decimal places in the triangles given. Next find the perimeters of the figures. The letter in each figure and its perimeter gives the puzzle answer code.

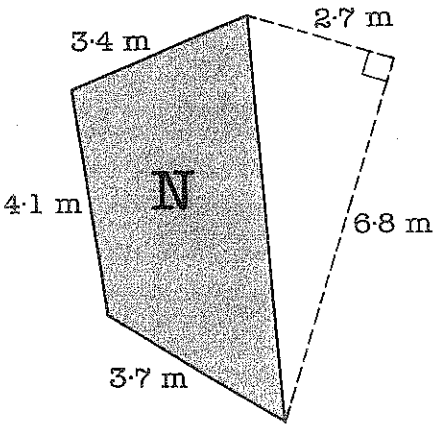


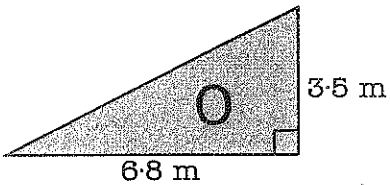


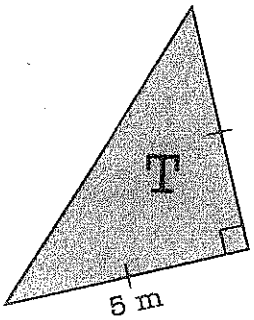






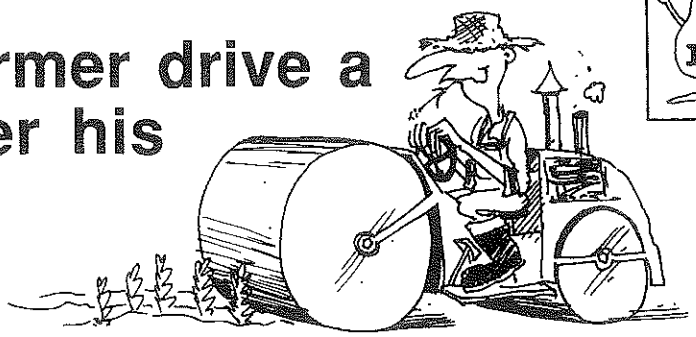






15·29 m	17·07 m	14·24 m	17·95 m	15·55 m	17·21 m	18·52 m	17·07 m	15·55 m	8·22 m	17·07 m

Why did the farmer drive a steamroller over his paddocks?



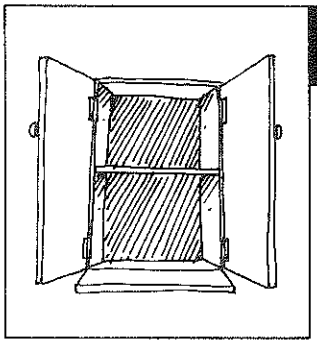
Convert the distances given to the equivalent lengths in the units indicated. The answer and letter next to each distance gives the puzzle answer code.

200 mm = _____ cm **a**	200 000 cm = _____ km **b**	70 mm = _____ cm **c**
2 km = _____ m **e**	$\frac{1}{2}$ km = _____ m **f**	5 000 000 mm = _____ km **g**
51 cm = _____ mm **h**	510 mm = _____ cm **i**	300 cm = _____ m **j**
3000 m = _____ km **k**	75 cm = _____ mm **l**	300 mm = _____ cm **o**
500 cm = _____ m **p**	7000 m = _____ km **q**	30 cm = _____ mm **r**
2 m = _____ cm **s**	7500 cm = _____ m **t**	7000 mm = _____ m **u**
1 m = _____ mm **v**	2 cm = _____ mm **w**	5 cm = _____ mm **y**

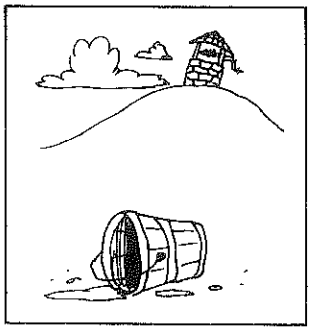
5 km	30 cm	2 km	20 cm	7 cm	3 km		75 m	20 mm	30 cm
750 mm	2000 m	75 m	75 m	2000 m			300 mm	200 cm	
500 m	30 cm	300 mm	2000 m	20 cm	7 cm	510 mm	30 cm	500 m	
3 m	5 km	50 mm	7 cm	5 m	1000 mm	5 km	500 m	1000 mm	7 km
51 cm	75 m	7 km	50 mm	30 cm	7 cm	7 m	3 m	5 km	500 m
300 mm	7 km	1000 mm	7 cm	1000 mm	7 km	5 km	7 m		

3 backward nursery rhymes

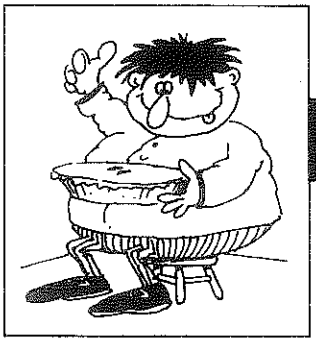
Find the total of all the lengths in each rectangle below in the units underlined. The total and the letter in each rectangle give the puzzle answer code.



102 m	65 mm	581 cm	1307 mm	1307 mm	11 cm
160 cm	65 mm	21 km	160 cm	228 cm	8 km
37 km	102 m	2311 m	8 km		



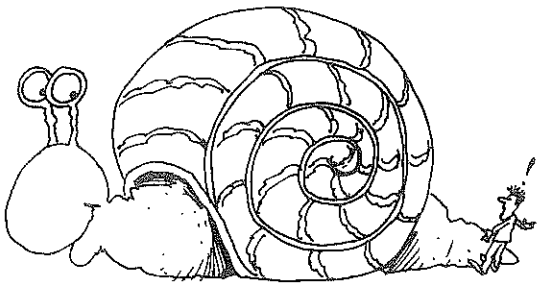
2311 m	2311 m	27 m	14 km	
82 mm	7 m	9 m	581 cm	14 km



65 mm	21 km	82 mm	65 mm		
8 km	160 cm	7 m	9 m	581 cm	14 km
21 km	2311 m	228 cm	228 cm	27 m	2311 m

25 mm 4 cm **R**	2 km 311 m **L**	5 m 81 cm **A**	12 000 m 9 km **E**
3 cm 50 mm 30 mm **U**	100 000 cm 8000 m 5 km **J**	2 m 500 cm 2000 mm **C**	1 m 30 cm 7 mm **B**
7 m 400 cm 16 m **I**	5 cm 12 mm 2 cm **N**	56 cm 1 m 40 mm **H**	3 km 3000 m 2000 m **O**
12 cm 160 mm 2 m **T**	56 m 3100 cm 15 m **D**	400 cm 2 m 1000 mm **K**	23 km 6000 m 8 km **M**

Where do you find giant snails?



The letter in each region and the total weight there gives the puzzle code.

5 cans
215 g
F

3 apples
170 g
A

12 bags of cement
63 kg
R

7 bananas
135 g
M

65 tables
72 kg
Q

126 bricks
$1\frac{1}{2}$ kg
E

3 coffee mugs
238 g
D

450 sheets of paper
4 g
Z

14 calculators
72 g
O

5 car tyres
36 kg
T

95 pens
7 g
S

124 newspapers
217 g
H

7 bags of oranges
16 kg
L

6 wine glasses
175 g
N

510 g	714 g	714 g	510 g	112 kg	189 kg	180 kg	180 kg	189 kg	756 kg	180 kg
1008 g	1050 g	945 g	1800 g	1075 g	26 908 g	1800 g	945 g	665 g	756 kg	
189 kg	26 908 g	945 g	1075 g	714 g	4680 kg	756 kg				

Why were the Middle Ages called the Dark Ages?

Answer the time questions below to find the puzzle code.

17 min 30 sec 12 min 19 sec + 5 min 11 sec _____ **T**	2 hr 17 min × 12 _____ **C**	52 min 5 sec − 16 min 52 sec _____ **N**
16 hr 32 min − 8 hr 25 min _____ **Y**	3 hr 47 min 5 hr 36 min + 7 hr 37 min _____ **E**	5 min 56 sec × 21 _____ **G**
24 min 15 sec × 8 _____ **W**	5)43 min 15 sec **B**	2 hr 19 min 40 sec 3 hr 16 min 13 sec + 1 hr 24 min 7 sec _____ **I**
6 min 31 sec 12 min 20 sec + 14 min 20 sec _____ **O**	47 min 12 sec − 31 min 47 sec _____ **S**	4 hr ÷ 6 = _____ **K**
48 hr 32 min ÷ 8 = _____ **M**	5 hr 48 min 2 hr 31 min + 6 hr 27 min _____ **A**	1 hr − 32 min 25 sec _____ **H**
13 hr 35 min 40 sec − 1 hr 34 min 55 sec _____ **R**		3 hr 12 min × 7 _____ **U**

8 min 39 sec	17 hr	27 hr 24 min	14 hr 46 min	22 hr 24 min	15 min 25 sec	17 hr	35 min	27 min 35 sec	17 hr	12 hr 45 sec
17 hr	3 hr 14 min	17 hr	12 hr 45 sec	17 hr	15 min 25 sec	33 min 11 sec	6 hr 4 min	14 hr 46 min	35 min 13 sec	8 hr 7 min
40 min	35 min 13 sec	7 hr	2 hr 4 min 36 sec	27 min 35 sec	35 min	15 min 25 sec	35 min	27 min 35 sec	17 hr	35 min 13 sec

What does the word PLAGIARIZE mean?

ANSWER THE TIME QUESTIONS AND LOCATE THE ANSWERS IN THE GRID. COLOUR THE REGIONS CONTAINING THE ANSWERS. THE LETTERS IN THE REMAINING REGIONS SPELL OUT THE PUZZLE SOLUTION.

FIND THE DIFFERENCE BETWEEN THE TIMES GIVEN

5:46 am and 2:05 pm

11 am and 9:16 am

8:15 pm and 11:34 pm

9:30 am and 4:40 pm

6:30 am and 5:10 pm

10:27 pm and 3:18 am the next day

2:15 am and 11:07 pm

noon and 7:21 pm

7 am and 7 pm the next day

5:56 pm and 11:17 pm

T 2 hr 3 min	O 7 hr	S 5 hr 2 min	S 36 hr	T 4 hr 21 min	E 11 hr 11 min	A 6 hr	M 1 hr 44 min
L 9 hr 1 min	F 6 hr 15 min	R 12 hr	T 7 hr 21 min	O 24 hr	M 21 hr 7 min	T 15 hr 3 min	
O 3 hr 19 min	H 8 hr 29 min	E 4 hr 31 min	W 3 hr 9 min	O 10 hr 40 min	R 19 hr 52 min		
I 35 min	T 2 hr 45 min	S 20 hr 52 min	I 3 hr 20 min	N 5 hr 41 min	G 10 hr 10 min		
A 4 hr 51 min	S 16 hr 5 min	O 15 hr	F 19 hr 30 min	T 8 hr 19 min	A 9 hr	N 12 hr 5 min	
O 48 hr	I 5 hr 21 min	T 42 min	H 4 min	E 27 hr	N 7 hr 10 min	R 4 hr 10 min	

A common object - find it!

FIND THE DIFFERENCE BETWEEN THE TWO TEMPERATURES ,GIVEN IN CELSIUS, IN EACH RECTANGLE. LOCATE THE DOT NEXT TO EACH ANSWER, AND JOIN THEM IN THE ORDER GIVEN IN EACH BLOCK OF RECTANGLES TO DRAW THE OBJECT.

25°, 33°	
7°, 54°	
19°, −2°	
0°, 97°	

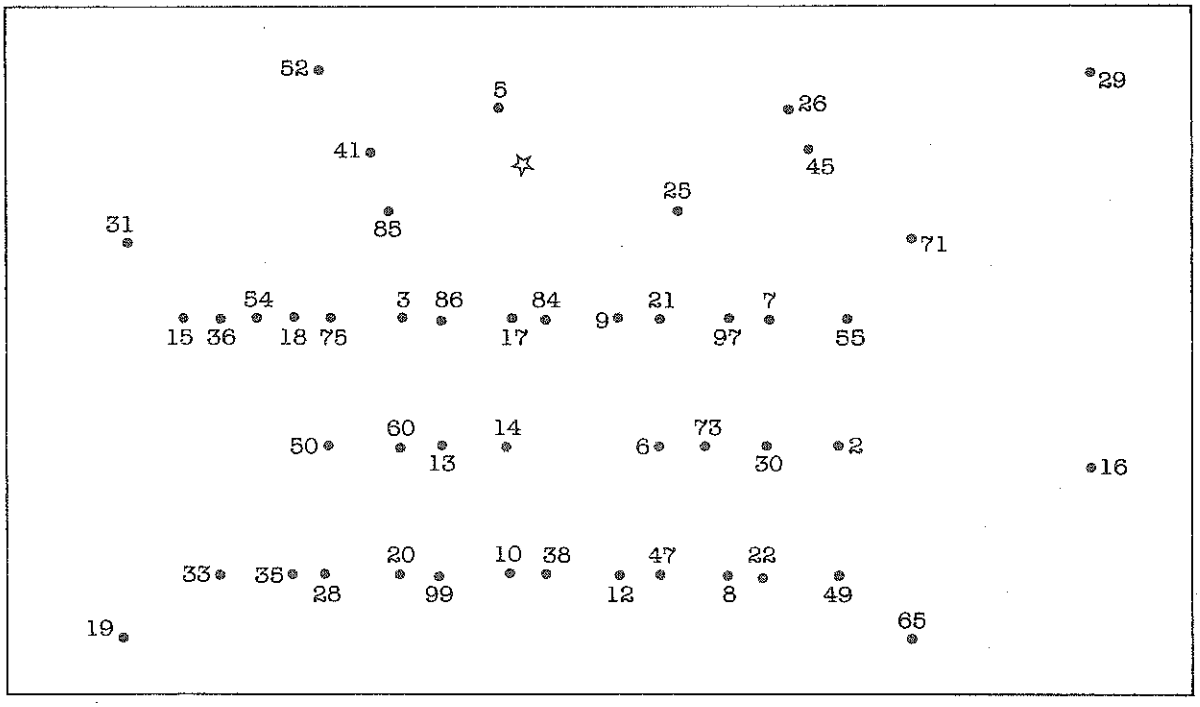
−12°, 3°	
78°, 24°	

15°, −16°	
49°, 120°	

−2°, 7°	
−30°, −18°	
5°, 43°	
9°, 93°	

42°, 70°	
−10°, 10°	
−50°, 10°	
28°, 78°	
97°, 172°	
14°, 17°	

81°, 46°	
33°, 51°	



−1°, 4°	
26°, 67°	
87°, 2°	
45°, 20°	
−15°, 30°	
19°, −7°	
32°, 27°	

11°, 33°	
37°, 86°	
9°, 11°	
57°, 87°	
−18°, −25°	
32°, −23°	

17°, 46°	
6°, −10°	
−52°, 13°	
12°, 83°	
−15°, 14°	
36°, 88°	
19°, 50°	
12°, 31°	
−24°, 41°	

13°, −4°	
66°, −20°	
−34°, −47°	
16°, 30°	
41°, 31°	
−21°, 78°	

☆ COLOUR THIS REGION BLACK

21°, 15°	
17°, 90°	

43°, 79°	
9°, −24°	

WARNING TO ESKIMOS

How far will a car go at 60 km/h for 7 hours?

r

4 m/s

How far will the skateboard go in 21 sec?

a

How long will it take a bird to fly 200 km, flying at 40 km/h?

n

How long will it take this swimmer to go 630 m?

70 m/min

o

600 km/h

How far will the jet go in $2\frac{1}{2}$ hr?

v

How far will a boat moving at 40 km/h go in 45 min?

y

The dog runs at 20 m/s for 45 sec. How far will it have run?

e

A snail's pace is 3 m/h How far will it travel in a day?

g

A bee moving at 16 m/s covers 112 m. How long will this take?

h

A cricket ball moving at 25 m/sec takes 5 sec to hit a fence. How far did it travel?

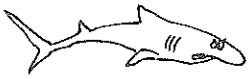
i

A pram was pushed at 2 km/h for 15 min. How far did it go?

u

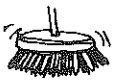
A bicycle moving at 35 km/h travels for 3 hours. How far did it go?

p



A shark swimming at 5 m/s covers 120 m in what time?

d

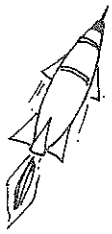


A street cleaner sweeps gutters at 8 m/min. How long will it take to cover 960 m?

s

Water flows down a creek at a rate of 21 m/min. How far will a toy yacht go in 10 min?

t



A rocket travels at 150 m/s. How far will it move in one minute?

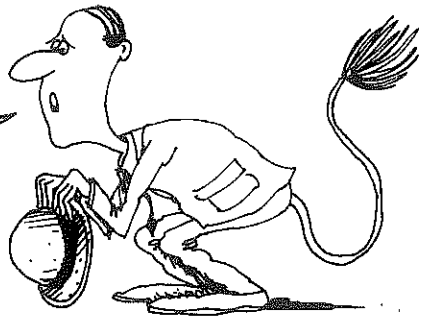
m

How far will a cloud move in 30 minutes if it is travelling at 50 m/min?

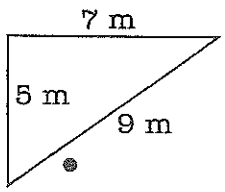
w

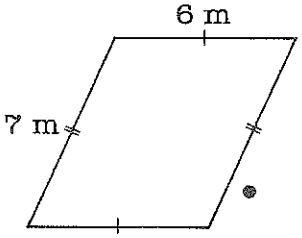
24 sec	9 min	5 h	210 m	72 m	125m	1500 km	900 m	84 m	
7 sec	9 min	500 m	2 h	900 m	1500 m	84 m	420 km	9 km	125 m	5 h	72 m
105 km	84 m	420 km	210 m	30 km	210 m	9 min	24 sec	84 m	30 km

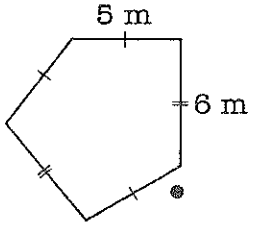
Doctor, can you help me out?

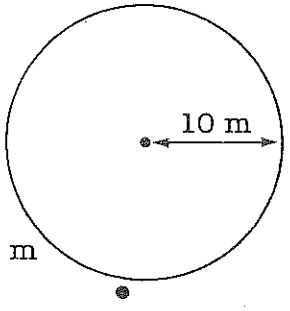


Calculate the perimeters of the 12 figures given (to 2 decimal places). Join the dot next to each figure to the dot next to its perimeter. Each line will pass through a letter and number giving the puzzle answer code.









4

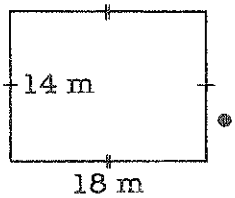
• 46 m O

W • 19·16 m • 61 m

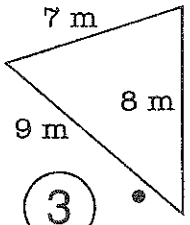
C 1 9

• 38·33 m

• 60 m



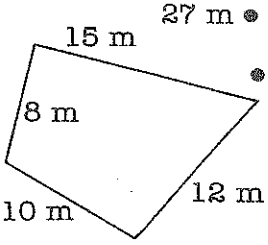
D A 10 12



N 3

27 m • 2

• 64 m



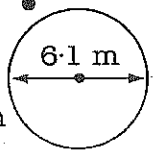
E I M

• 24 m

• 21 m

11 6

H 7 U

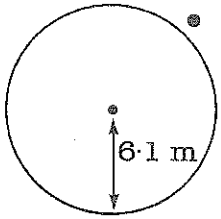


• 45 m

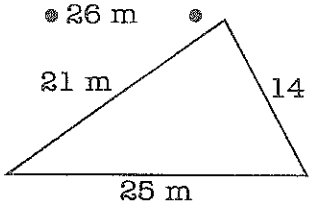
5 8

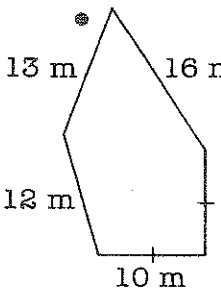
• 62·83 m

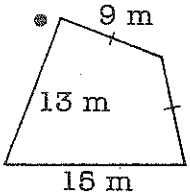
Y



• 26 m







1	2	3	4	2	1	5	6	7	3	7
6	8	9	4	8	10	11	3	12		

Why were the soldiers tired on April 1st?

Calculate the areas of the rectangles given to find the puzzle answer code.

360 cm^2	143 mm^2	48 km^2	15 m^2	48·4 km^2	144 m^2	143 mm^2	20·7 mm^2	9·8 km^2
143 mm^2	26·46 m^2	9·8 km^2	15 m^2	2000 cm^2	1024 cm^2	48·4 km^2	144 m^2	
20·7 mm^2	9·8 km^2	15 m^2	2000 cm^2	15 m^2	30·1 km^2	15 m^2	70 mm^2	48 km^2
9·8 km^2	49·56 m^2	28 m^2	73·5 cm^2	48 mm^2	2000 cm^2	15 m^2	26·46 m^2	144 m^2

5 m
3 m
a

50 cm
40 cm
d

8 km
6 km
c

11 mm
13 mm
e

7 m
4 m
f

2·8 km
3·5 km
h

7 cm
10·5 cm
3

12 mm
4 mm
l

32 cm
j

8·4 m
5·9 m
o

7 km
4·3 km
m

2·7 m
9·8 m
y

14 mm
5 mm
r

18 m
8 m
s

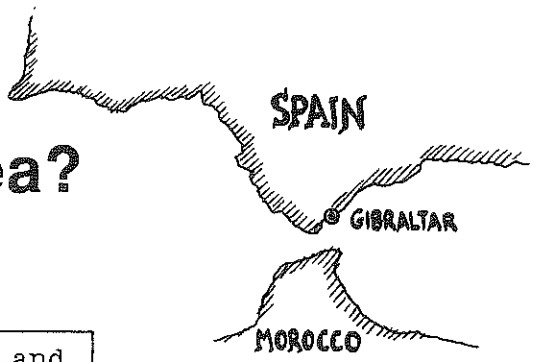
12 cm
30 cm
b

4·6 mm
4·5 mm
t

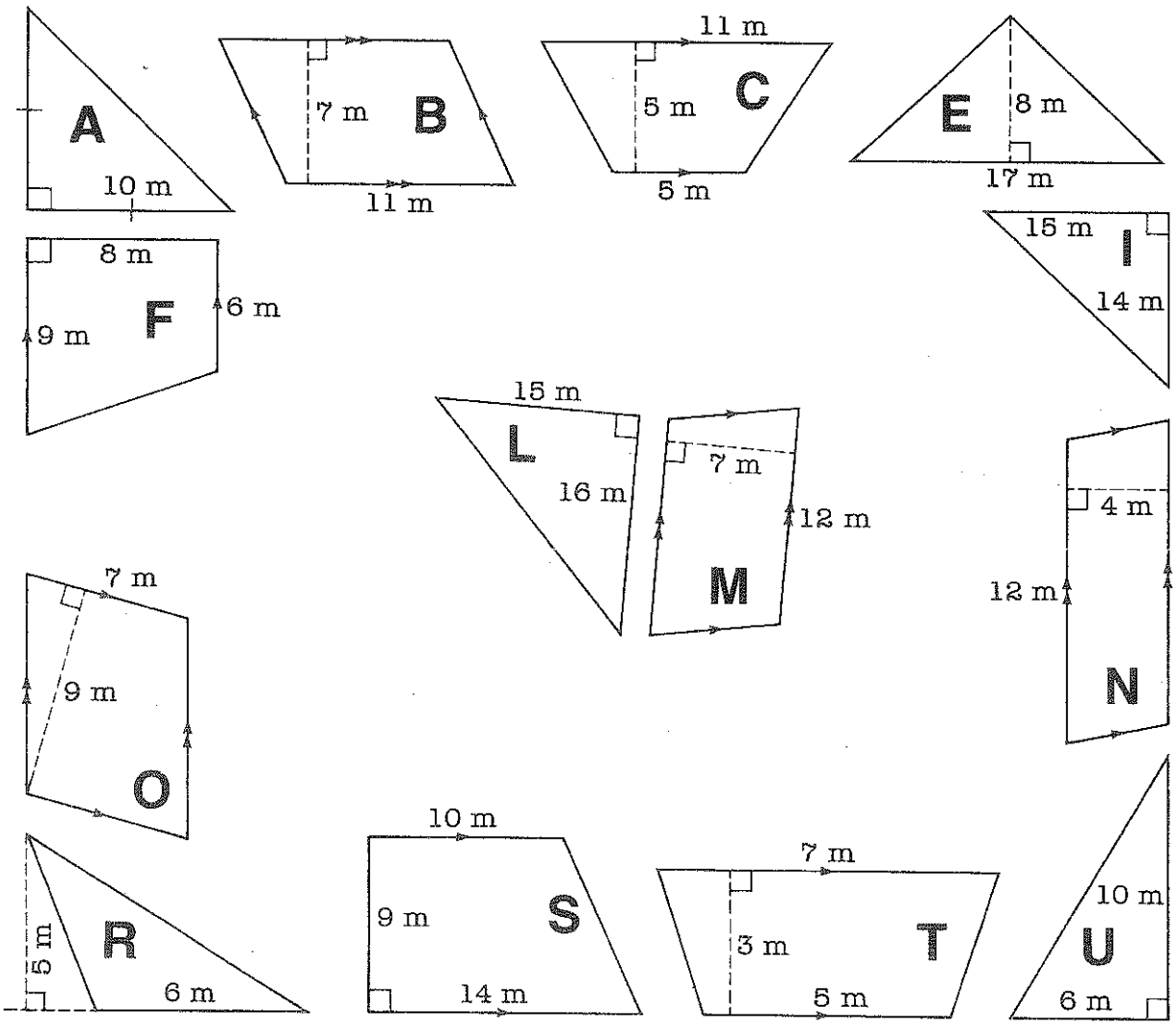
8·8 km
5·5 km
u

160

How wide is the entrance to the Mediterranean Sea?

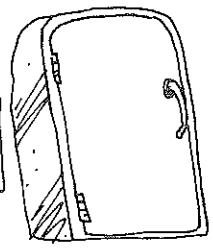


Find the **areas** of the figures given. The area and letter inside each figure gives the puzzle code.

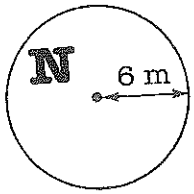


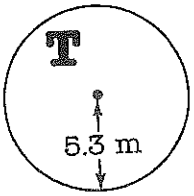
18 m²	H	68 m²	108 m²	18 m²	15 m²	50 m²	105 m²	18 m²	108 m²
63 m²	60 m²	G	105 m²	77 m²	15 m²	50 m²	120 m²	18 m²	50 m²	15 m²
50 m²	15 m²	68 m²	60 m²	63 m²	30 m²	15 m²	18 m²	68 m²	68 m²	48 m²
K	84 m²	50 m²	40 m²	15 m²	63 m²	108 m²	108 m²			

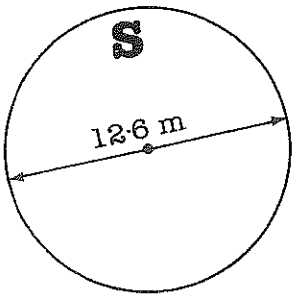
Why did the soldier salute the refrigerator?

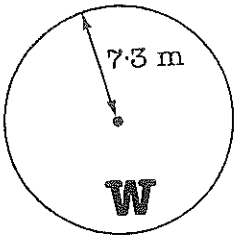


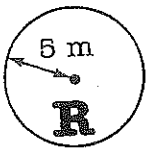
CALCULATE THE AREAS OF THE CIRCLES TO FIND THE CODE. ANSWERS TO 3 DECIMAL PLACES

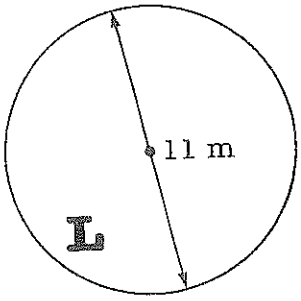


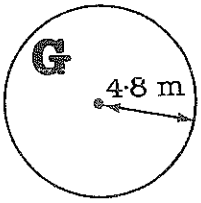


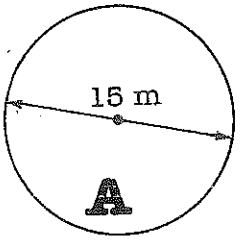


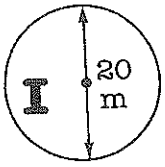


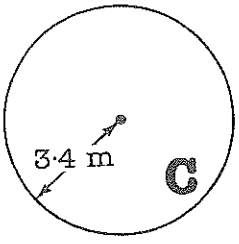


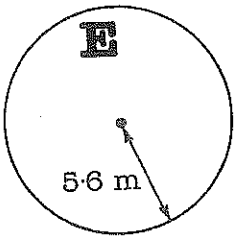


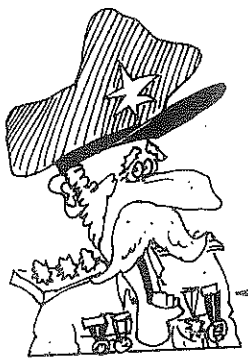






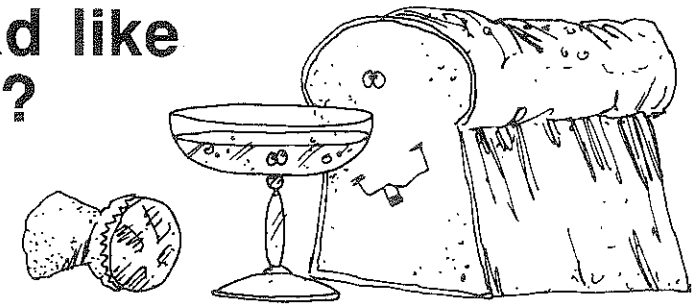




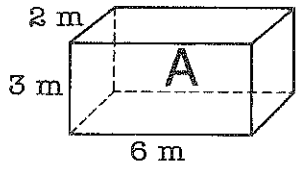


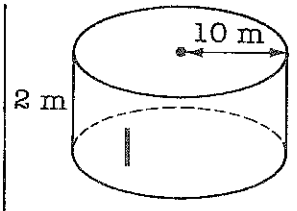
314·159 m^2	88·247 m^2	167·415 m^2	176·715 m^2	124·690 m^2
72·382 m^2	98·520 m^2	113·097 m^2	98·520 m^2	78·540 m^2
176·715 m^2	95·033 m^2	98·520 m^2	95·033 m^2	98·520 m^2
36·317 m^2	88·247 m^2	78·540 m^2	314·159 m^2	36·317 mm^2

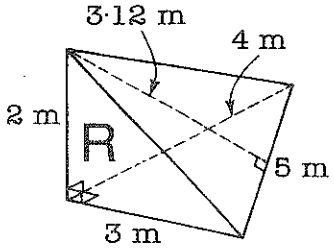
Why is bread like champagne?

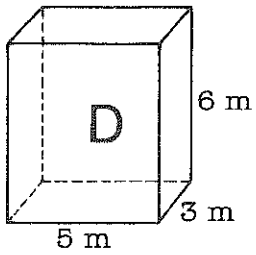


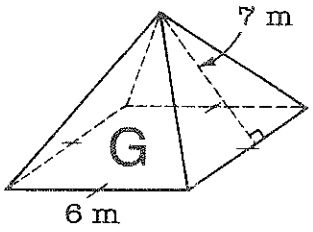
Find the total surface area (to 2 decimal places) of each of the objects shown to find the puzzle answer code.

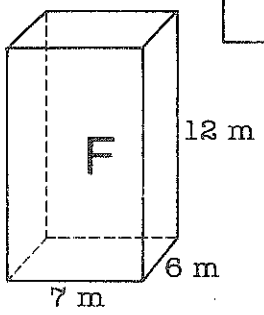


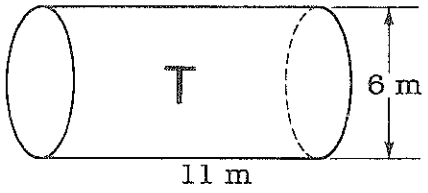


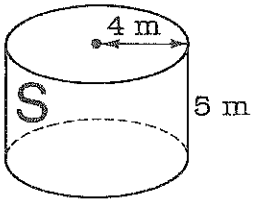


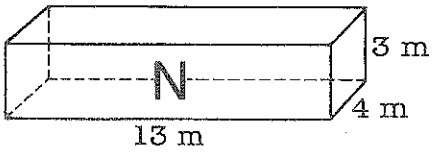


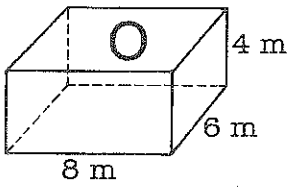








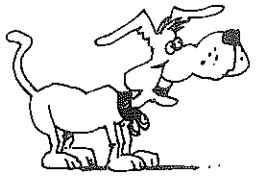




753·98 m^2	263·89 m^2	226·19 m^2	120 m^2	208 m^2	208 m^2	126 m^2	396 m^2	208 m^2

20·8 m^2	263·89 m^2	208 m^2	72 m^2	226·19 m^2	263·89 m^2	753·98 m^2	206 m^2	120 m^2

How did bulldogs get such flat noses?



Change the areas given to the units indicated to find the puzzle answer code.

a 5 cm^2 = _____ mm^2

c 2 m^2 = _____ cm^2

d 300 hectares = _____ km^2

e 4 000 000 m^2 = _____ km^2

f 6000 mm^2 = _____ cm^2

g 500 000 cm^2 = _____ m^2

h 400 000 m^2 = _____ hectares

i 30 000 mm^2 = _____ cm^2

k 2000 mm^2 = _____ cm^2

m 6 000 000 m^2 = _____ km^2

n 500 hectares = _____ km^2

o 2 000 000 mm^2 = _____ m^2

p 300 000 cm^2 = _____ m^2

r 4 m^2 = _____ cm^2

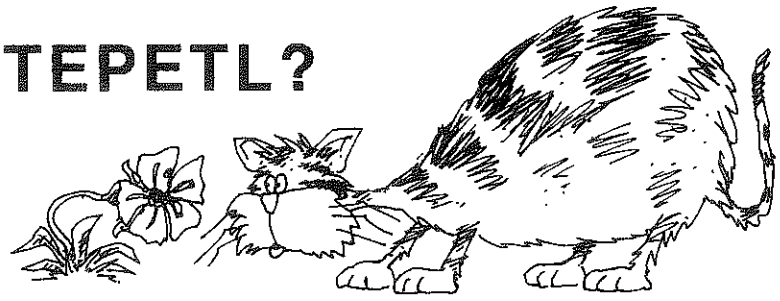
s 60 cm^2 = _____ mm^2

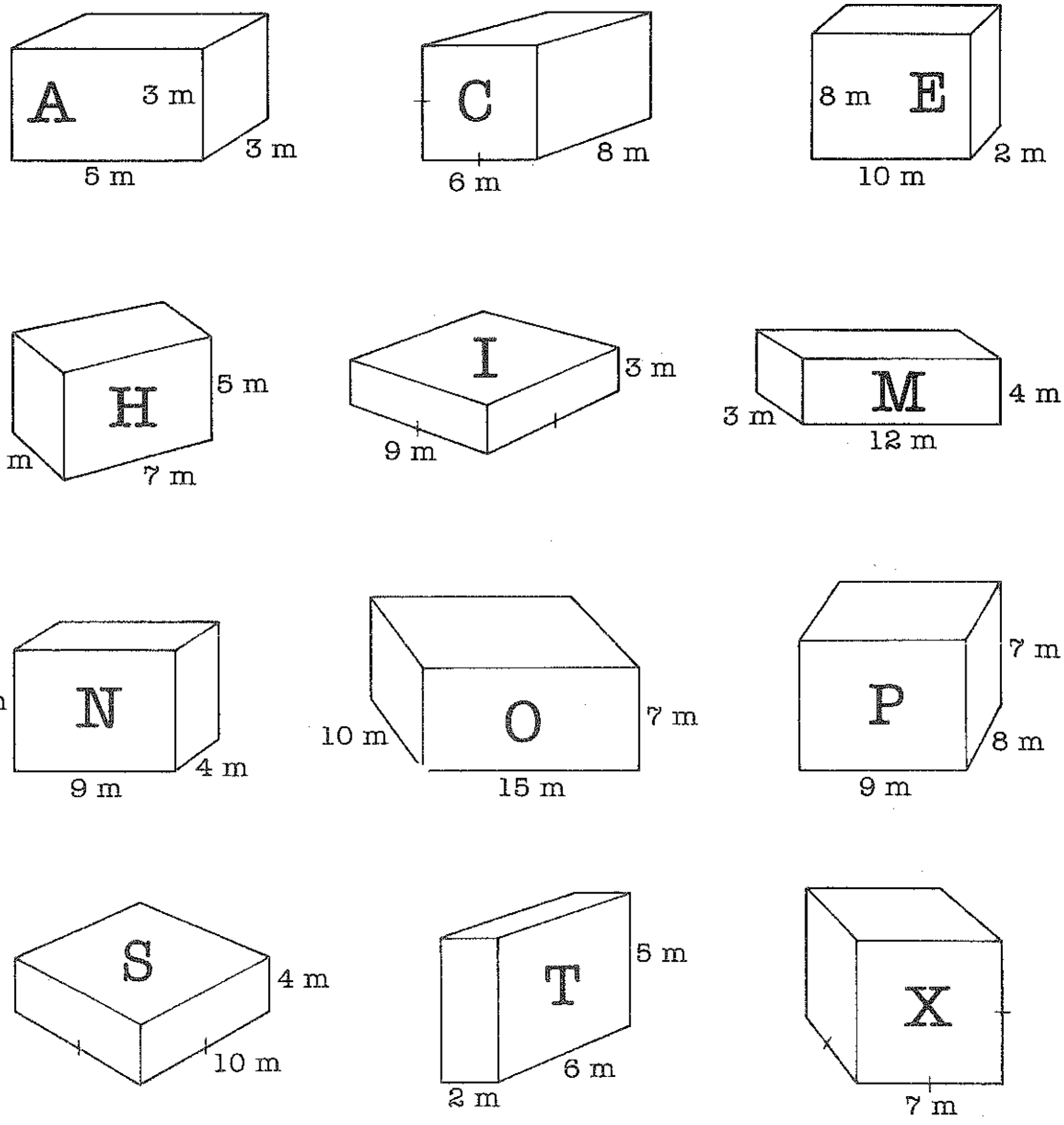
60	40 000	2	6	20 000	40	500	6000	300	5	50

30	500	40 000	20	4	3	20 000	500	40 000	6000

What is POPOCATEPETL?

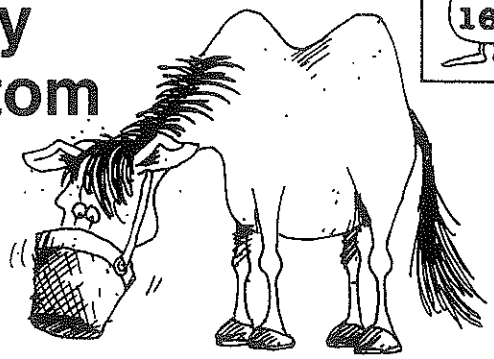
CALCULATE THE VOLUME OF THE CUBOIDS GIVEN TO DISCOVER THE PUZZLE ANSWER CODE.





60 m^3	105 m^3	160 m^3	400 m^3	160 m^3	288 m^3	1050 m^3	252 m^3	D
105 m^3	243 m^3	G	105 m^3	160 m^3	400 m^3	60 m^3	144 m^3	1050 m^3
U	252 m^3	60 m^3	45 m^3	243 m^3	252 m^3	504 m^3	160 m^3	45 m^3
K	243 m^3	252 m^3	144 m^3	160 m^3	343 m^3	243 m^3	288 m^3	1050 m^3

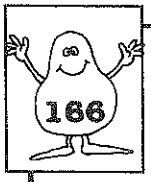
What did the horse say when it got to the bottom of the feed bag?



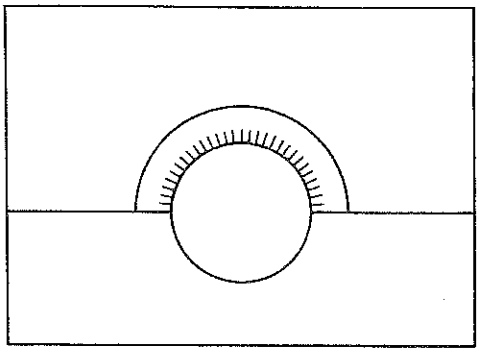
JOIN THE DOTS NEXT TO THE EQUAL VOLUMES ON BOTH SIDES OF THE PAGE. EACH LINE WILL PASS THROUGH A NUMBER AND LETTER GIVING THE PUZZLE ANSWER CODE

60 000 mm^3	•	H	S	• 6 m^3
2 000 000 cm^3	•	W	9	• 5000 mm^3
5 cm^3	•	4	2	• 200 cm^3
6 000 000 cm^3	•	A	T	• 60 cm^3
20 cm^3	•	E	5	• 20 000 mm^3
5 000 000 cm^3	•	1	7	• 6000 mm^3
200 000 mm^3	•	L	R	• 500 cm^3
6 cm^3	•	8	3	• 2 m^3
500 000 mm^3	•	I	6	• 5 m^3

1	2	3	4	3	4	1	2	5	6	7	4	1	4	1	8	7	9



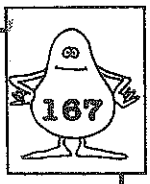
What's this?



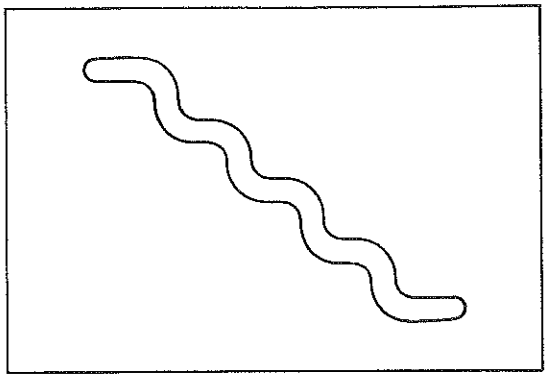
Make x the subject of each equation given to find the puzzle answer code.

$y = x + 3$	A
$y = \frac{x}{2}$	B
$y = 5x$	C
$y = x - 4$	D
$y = \frac{x - 1}{3}$	E
$y = 2x + 4$	G
$y = \frac{x}{5} - 1$	H
$y = 6 + x$	I
$y = \frac{x}{3}$	L
$y = 4x$	N
$y = x - 1$	O
$y = \frac{x + 7}{2}$	P
$y = 2x - 8$	R
$y = \frac{x}{6} + 2$	S
$y = x$	T
$y = \frac{x - 12}{4}$	U

$x = 2y - 7$	$x = y + 1$	$x = \frac{y}{2} + 4$	$x = \frac{y}{5}$	$x = 4y + 12$	$x = 2y - 7$	$x = y - 6$	$x = \frac{y}{4}$
$x = 3y + 1$	$x = 5y + 5$	$x = y - 6$	$x = y + 4$	$x = y - 6$	$x = \frac{y}{4}$	$x = \frac{y}{2} - 2$	$x = 2y$
$x = 3y + 1$	$x = 5y + 5$	$x = y - 6$	$x = \frac{y}{4}$	$x = y + 4$	$x = y - 3$	$x = 2y$	$x = 3y + 1$
$x = y - 3$	$x = \frac{y}{5}$	$x = 5y + 5$	$x = 2y$	$x = y - 3$	$x = 3y$	$x = 3y$	$x = y - 3$
$x = y$	$x = 6y - 12$	$x = 4y + 12$	$x = \frac{y}{4}$	$x = 6y - 12$	$x = 3y + 1$	$x = y$	



What on earth is this?



Solve the simultaneous equations using the substitution method. The value of the letters gives the puzzle answer code.

$2a + n = 8$
$n = 2a$

$4o - 8s = 24$
$s = o - 7$

$5m - i = 23$
$i = 2m - 2$

$3g + 5d = 39$
$d = 3g - 3$

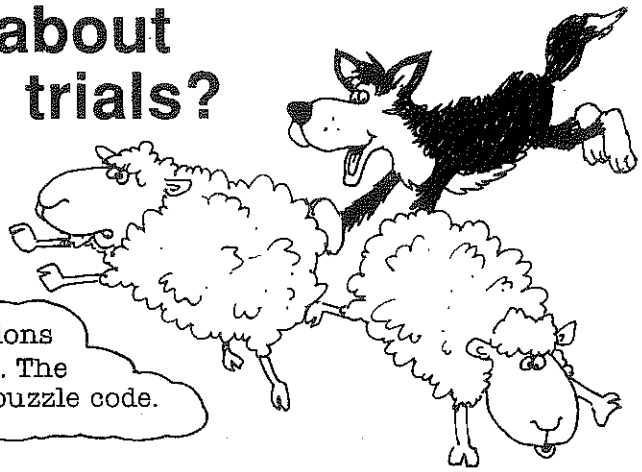
$r + 4t = 41$
$r = 2t - 13$

$5w - 4n = 6$
$n = 3w - 19$

2	10	8	5	7	3	8	12	11	3
6	8	10	4	1	9	2	12	5	1

168

Did you hear about the sheepdog trials?

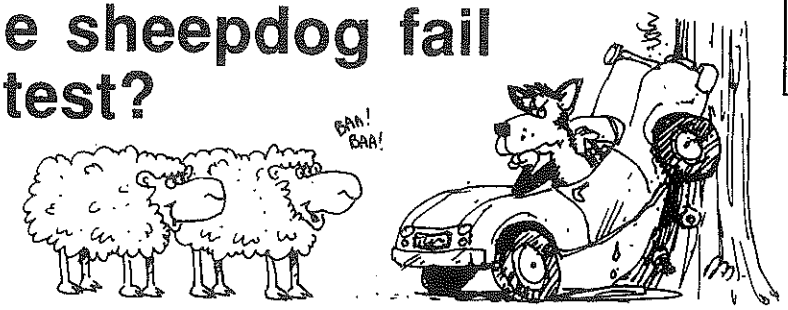


Solve the simultaneous equations using the elimination method. The value of the letters gives the puzzle code.

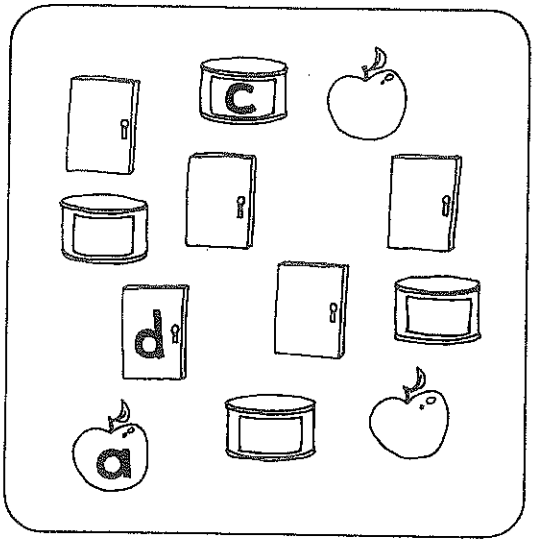
$3A + D = 36$ $2A - D = -1$	$5E + 2F = 58$ $3E - 2F = 22$	$G + 7H = 25$ $-G - 2H = -20$
$4I - 3L = 46$ $7I + 3L = 130$	$-2M + 5N = 1$ $2M - 4N = 4$	$5O - 11R = 23$ $2O + 11R = 40$
$12S + 3T = 60$ $S - 3T = -21$	$-3U + 15W = 165$ $2U - 15W = -165$	$Y + T = 34$ $2Y - T = 8$

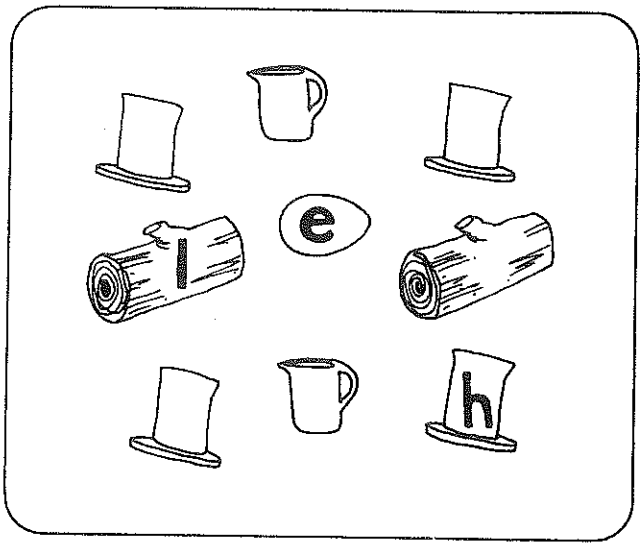
9	5	10	11	7	3	4	9	0	5	15	5	9	8
18	0	16	6	8	14	7	5	15	20	1	10	2	10	3	20
18	9	8	20	1	2	10	10	12	9	5	8	1	3

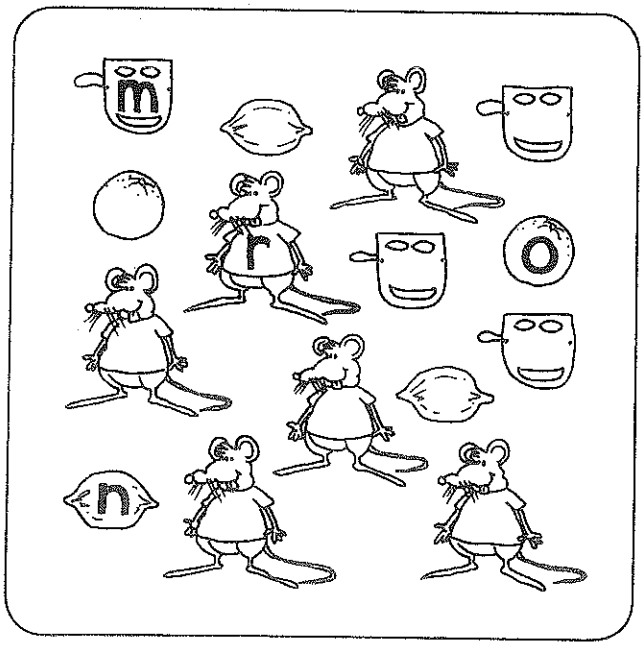
Why did the sheepdog fail its driving test?

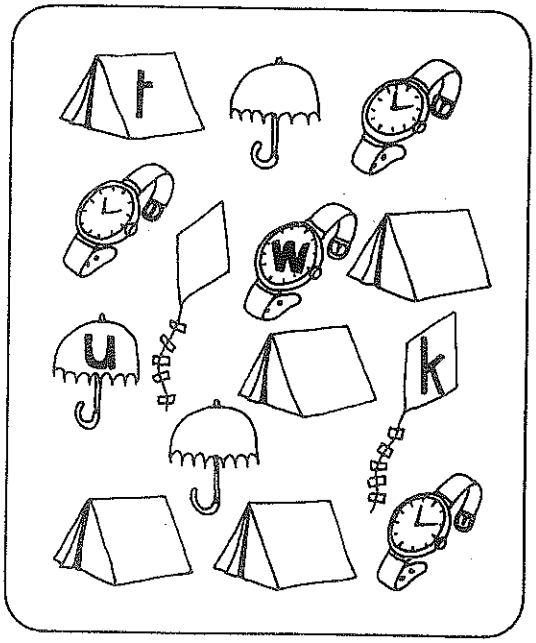


If one item is selected at random from each region, find the probability that it will be the lettered items. Each lettered item and its probability gives the puzzle code.









$\frac{4}{9}$	$\frac{1}{9}$	$\frac{1}{3}$	$\frac{2}{15}$	$\frac{3}{14}$	$\frac{2}{9}$	$\frac{5}{12}$	$\frac{1}{5}$	$\frac{5}{14}$

$\frac{4}{15}$	$\frac{1}{4}$	$\frac{1}{7}$	$\frac{1}{9}$	$\frac{1}{4}$	$\frac{1}{9}$	$\frac{2}{7}$	$\frac{1}{9}$	$\frac{5}{14}$	$\frac{3}{14}$	$\frac{2}{5}$	$\frac{1}{5}$

What's worse than an Indian on the warpath?

Determine the expected outcomes of the following experiments. Each answer will give part of the puzzle code.

48 rolls of a die. How many 3s? **a**	26 draws with replacement from a pack of cards. How many red cards? **b**
50 random selections of a number from 1 to 10. How many prime numbers? **e**	15 selections with replacement from a bag containing 3 white and 2 red marbles. How many white marbles? **f**
78 selections from the letters in the alphabet. How many vowels? **h**	In a class of 30 how many pass a test if each has a probability of 0·9 of passing? **i**
93 people were asked for their favourite day in January. How many days ending in a one? **k**	How many heads in 50 tosses of a coin? **n**
40 digits are selected at random. How many 5s? **o**	99 numbers chosen randomly from 10 to 20. How many odd numbers? **p**
130 draws from a pack of cards. How many aces? **s**	34 rolls of a die. How many results under 4? **t**

8	13	8	25	8	25	8	10	12	27	25		
4	25	17	15	20	9	4	4	17	45	8	17	15