1.

Define tan α
in terms of
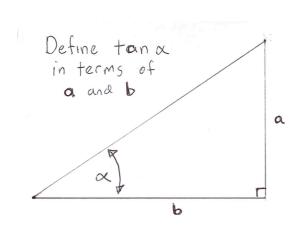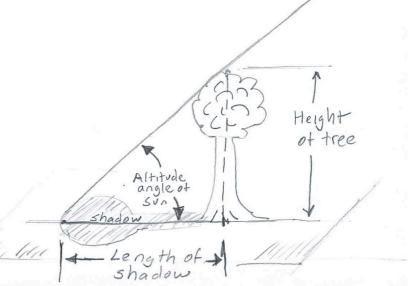a and b

a

α

b

2. Without using a calculator, what is the tangent of 45^0? Explain with an sketch of a triangle.

The following problems need a calculator with an inverse tangent function.

3. In the sketch on the right, if the altitude of the sun is 50^0, and the length of the shadow is 10m, how tall is the tree?

Height of tree

Altitude angle of Sun

shadow

Length of shadow

4. The Great Pyramid is 280 cubits high, and is 440 cubits wide at the base. How steep are the sides of the Great Pyramid (in degrees)?

5. Formulate a strategy using both Pythagoras's Theorem and the tangent function to find the angles of any right triangle given the length of any two sides.