

## WORKSHEET: USING TRIG. RATIOS TO SOLVE WORD PROBLEMS

Draw a picture, write and solve an equation, and answer the question being asked the following problems. Round all distances to the nearest tenth and angle measures to the nearest degree.

1.) An ant is looking up at you with an angle of elevation of  $24^\circ$ . You are 5 feet tall. How far is the ant from your foot?

2.) Bob is looking at a helicopter that is flying 1,000 feet above the ground. Bob is 1500 feet from the helicopter. What angle of elevation is Bob looking at the helicopter?

3.) A building 50 feet high casts a shadow 68 feet long. Find the measure of the angle of elevation of the sun.

4.) A dog chased a cat up a tree. The cat is 14 feet up the tree. If the dog is standing 3 feet from the tree, what is the distance from the cat to the dog?



5.) From the top of a tower, the angle of depression to a flower on the ground is  $74^\circ$ . The top of the tower is 90 feet above the ground. How far is the flower from the foot of the tower?

6.) A fireman's ladder leaning against a house makes an angle of  $50^\circ$  with the ground. How long is the ladder if the ladder is 8 feet from the foot of the house?

7.) You are standing on a cliff that is 400 feet tall. You throw your geometry book off the cliff. The book lands 300 feet from the base of the cliff. How far is the book now from you?

8.) Cathy is flying a kite. The kite has an angle of depression of  $47^\circ$  and is flying on 35 feet of string. If Cathy is holding the end of the string 5 feet off the ground, how high above the ground is the kite?

9.) A bird is flying above a tree. You are standing 40 feet away from the tree. The angle of elevation to the top of the tree is  $32^\circ$ , and the angle of elevation to the bird is  $42^\circ$ . What is the distance from the bird to the top of the tree?

