

Trigonometry Word Problems

- 1) One diagonal of a rhombus makes an angle of  $29^\circ$  with a side of the rhombus. If each side of the rhombus has a length of 7.2", find the lengths of the diagonals.
- 2) An observer on a cliff 1200 feet above sea level sights two ships due East. The angles of depression to the ships are  $48^\circ$  and  $33^\circ$ . What is the distance between the ships?
- 3) I'm standing on a 50 foot cliff, looking at my two dogs sitting on the beach below. If my line of sight is 6' above the ground and the angles of depression are  $51^\circ$  and  $37^\circ$ , how far apart are the dogs?
- 4) Suppose a tree 40' tall casts a shadow of length 60'. What is the angle of elevation (with respect to the ground) from the end of the shadow to the top of the tree?

- 5) Two boats leave a dock at the same time. Boat A goes due North 500 feet and stops.  
Boat B goes due East 400 feet, stops and turns toward Boat A.  
What angle must B turn to face and proceed directly to Boat A?
- 6) The *angle of elevation* from the top of a small building to the top of a nearby tall building is 47 degrees.  
And, the *angle of depression* from the top of the small building to the bottom of the tall building is 15 degrees.  
If the smaller building is 30 feet high, determine the height of the tall building.
- 7) The distance from the bottom of a ramp to the back of a moving truck is 11 feet.  
If the angle between ramp and the ground is  $21^{\circ}20'$ , how high is the back of the truck off the ground?