

## Angle of Elevation & Depression Trig Worksheet

Draw and label a picture for each problem

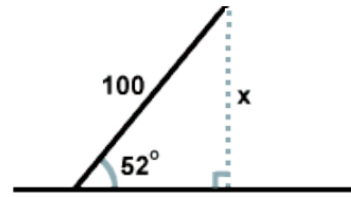
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1. Brian's kite is flying above a field at the end of 65 m of string. If the angle of elevation to the kite measures  $70^\circ$ , and Brian is holding the kite 1.2 m off the ground. How high above the ground is the kite flying?
2. From an airplane at an altitude (height) of 1200 m, the angle of depression to a rock on the ground measures  $28^\circ$ . Find the distance from the plane to the rock.
3. From a point on the ground 12 ft from the base of a flagpole, the angle of elevation of the top of the pole measures  $53^\circ$ . How tall is the flagpole?
4. From a plane flying due east at 265 m above sea level, the angles of depression of two ships sailing due east measure  $35^\circ$  and  $25^\circ$ . How far apart are the ships?

## Angle of Elevation & Depression Worksheet (Cont.)

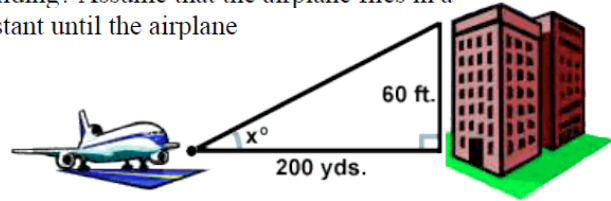
Find all values to the nearest tenth.

5. A man flies a kite with a 100 foot string. The angle of elevation of the string is  $52^\circ$ . How high off the ground is the kite?



6. From the top of a vertical cliff 40 m high, the angle of depression of an object that is level with the base of the cliff is  $34^\circ$ . How far is the object from the base of the cliff?

7. An airplane takes off 200 yards in front of a 60 foot building. At what angle of elevation must the plane take off in order to avoid crashing into the building? Assume that the airplane flies in a straight line and the angle of elevation remains constant until the airplane flies over the building.



8. A 14 foot ladder is used to scale a 13 foot wall. At what angle of elevation must the ladder be situated in order to reach the top of the wall?

9. A person stands at the window of a building so that his eyes are 12.6 m above the level ground. An object is on the ground 58.5 m away from the building on a line directly beneath the person. Compute the angle of depression of the person's line of sight to the object on the ground.

10. A ramp is needed to allow vehicles to climb a 2 foot wall. The angle of elevation in order for the vehicles to safely go up must be  $30^\circ$  or less, and the longest ramp available is 5 feet long. Can this ramp be used safely?

