

## Angle of Elevation Word Problems

Round all answers to the nearest tenth. If the answer is in degrees, round to the nearest degree. Be sure to put your answer in a complete sentence. Make sure that you draw a picture based upon the given information.

- 1) A tree casts a shadow 21 m long. The angle of elevation of the sun is  $51^\circ$ . What is the height of the tree?
- 2) A helicopter is hovering over a landing pad 100 m from where you are standing. The helicopter's angle of elevation with the ground is  $12^\circ$ . What is the altitude of the helicopter?
- 3) You are flying a kite and have let out 80 m of string. The kite's angle of elevation with the ground is  $40^\circ$ . If the string is stretched straight, how high is the kite above the ground?
- 4) A 15 m pole is leaning against a wall. The foot of the pole is 10 m from the wall. Find the angle the pole makes with the ground.
- 5) A wire reaches from the top of a 120 m television transmitter tower to the ground. The wire makes a  $63^\circ$  angle with the ground. Find the length of the wire.

- 6) An airplane climbs at an angle of  $18^\circ$  with the ground. Find the ground distance the plane travels as it moves 2500 m through the air.
- 7) A wooden beam 24 feet long leans against a wall and makes an angle of  $71^\circ$  with the ground. How high up the wall does the beam reach?
- 8) A wire attached to the top of a pole reaches a stake in the ground 20 feet from the foot of the pole and makes an angle of  $58^\circ$  with the ground. Find the length of the wire.
- 9) A surveyor is 100 meters from a bridge. The angle of elevation to the top of the bridge is  $35^\circ$ . Find the height of the bridge.
- 10) A ladder with its foot on a horizontal flat surface rests against a wall. It makes an angle of  $30^\circ$  with the horizontal. The foot of the ladder is 41 feet from the base of the wall. Find the height of the point where the ladder touches the wall.