1. A ladder, 500 cm long, leans against a building. If the angle between the ground and the ladder is 57 degrees, how far from the wall is the bottom of the ladder? Round the answer to the nearest tenth.

2. The sides of a rectangle are 25 cm and 8 cm. What is the measure, to the nearest degree, of the angle formed by the short side and a diagonal of the rectangle?

3. A kite is flying 115 ft above the ground. The length of the string to the kite is 150 ft, measured from the ground. Find the angle, to the nearest degree, that the string makes with the ground.

4. An observation tower is 75 m high. A support wire is attached to the tower 20 m from the top. If the support wire and the ground form an angle of 46 degrees, what is the length of the support wire, to the nearest tenth?
5. At a point 30 feet from the base of a tree, the angle formed with the ground looking to the top measures $53^\circ$. Find, to the nearest foot, the height of the tree.

6. An observer is 120 feet from the base of a television tower, which is 150 feet tall. Find, to the nearest degree, the angle of elevation of the top of the tower from the point where the observer is standing.

7. The angle of elevation of the top of a flagpole from a point on the ground 30 meters from the base of the flagpole is 18 degrees. What is the height of the flagpole, to the nearest meter?

8. From the top of a lighthouse 160 feet high, the angle of depression of a boat out at sea is $24^\circ$. Find, to the nearest foot, the distance from the boat to the foot of the lighthouse. (The foot of the lighthouse is at sea level.)
9. You are a block away from a skyscraper that is 780 feet tall. Your friend is between the skyscraper and yourself. The angle of elevation from your position to the top of the skyscraper is 42°. The angle of elevation from your friend’s position to the top of the skyscraper is 71°. To the nearest foot, how far are you from your friend?

10. At 10:00 am, a person observes a hot air balloon climbing vertically in the air from a point 300 meters away from the launch pad for the balloon. The angle of elevation to the top of the balloon at this time is 25°. At 10:02 am, the person observes that the angle of elevation to the balloon is now 60°. What is the change in altitude, to the nearest meter, for the balloon over the 2 minutes between the first and second observations?