Name: _____   Date: _____
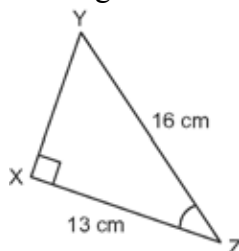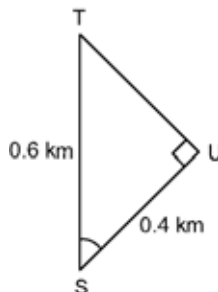
Section 4.2 Use Trigonometry to Find Angles

1. Find the measure of the marked angle, to the nearest degree.
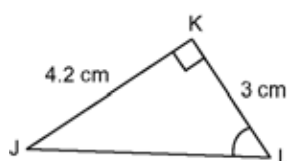
   a)

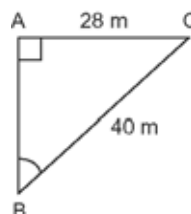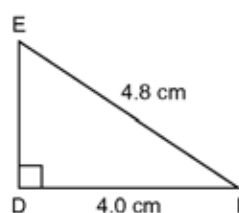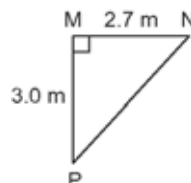
   b)

   c)

   d)

2. Solve each triangle. Round your answers to the nearest tenth of a unit.

   a)

   b)

3. Sketch, then solve each triangle. Round your answers to the nearest tenth of a unit.

   a) In $\triangle ABC$, $\angle B = 90°$, $AB = 7.8$ cm, and $AC = 8$ cm.

   b) In $\triangle GHI$, $\angle G = 90°$, $GH = 5.6$ km, and $HI = 9.1$ km.

   c) In $\triangle PQR$, $\angle R = 90°$, $PR = 3.4$ m, and $QR = 7.7$ m.

   d) In $\triangle JKL$, $\angle L = 90°$, $\angle K = 56°$, and $JL = 4.8$ mm.

4. The length of a ramp is 10 m, and its height is 1 m. Determine the angle of elevation of the ramp to the nearest tenth of a degree.

5. Kristen wants to ride the roller coaster, The Plummet. The peak of the roller coaster is 250 m above ground, and the length of the drop is 255 m. Find the angle of depression of the track to the nearest tenth of a degree.

6. A hotel is in the shape of a pyramid. Its height is 70 m and the length of each slanted wall is 108 m. Calculate the angle between each slanted wall and the ground. Round your answer to the nearest degree.

7. Rafael ran on a treadmill set at an incline. The machine indicated that he ran 1.75 km along the incline, and a horizontal distance of 1.71 km. What is the angle of the incline, to the nearest degree?

8. A staircase is 38 m long and covers a horizontal distance of 28 m. Calculate the angle the staircase makes with the ground. Round your answer to the nearest tenth of a degree.

9. An airplane is flying at an altitude of 800 m. A passenger sees the roof and the base of a 200-m high skyscraper. The skyscraper is at a horizontal distance of 3400 m from the airplane.

   a) Find the angle of depression from the airplane to the roof of the skyscraper to the nearest tenth of a degree.

   b) Find the angle of depression from the airplane to the base of the skyscraper to the nearest tenth of a degree.

10. A rhombus has an area of 16 cm^2. The longest diagonal of the rhombus is 7 cm. Find the measure of one of the two smallest angles of the rhombus. Round your answer to the nearest degree.