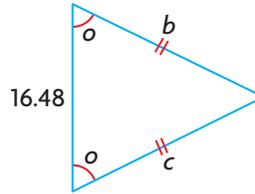
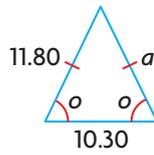


Process Checklist

- ✓ Questions 2 and 5: Did you visualize or sketch a diagram that **represents** the information accurately?
- ✓ Question 7: Did you **communicate** your thinking with words and a diagram that **connect** the situation with trigonometry?
- ✓ Questions 8 and 9: Did you **reflect** on the relationship between the given information and the questions asked as you solved the problems?

1. Determine the indicated side lengths in the triangles.



2. Two trees cast a shadow when the Sun is up. The shadow of one tree is 12.1 m long. The shadow of the other tree is 7.6 m long. If the shorter tree is 5.8 m tall, determine the height of the taller tree. Round your answer to the nearest tenth of a metre.

3. Determine each unknown value. Round your answer to one decimal place.

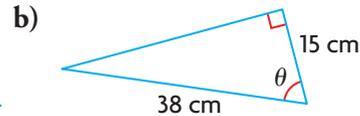
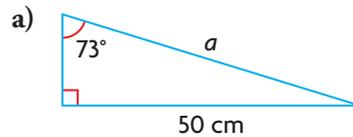
a) $\sin 28^\circ = \frac{x}{5}$

c) $\tan A = 7.1154$

b) $\cos 43^\circ = \frac{13}{y}$

d) $\cos B = \frac{7}{9}$

4. Determine the length of the indicated side or the measure of the indicated angle.



5. Solve each triangle.

a) In $\triangle ABC$, $\angle A = 90^\circ$, $\angle B = 14^\circ$, and $b = 5.3$ cm.

b) In $\triangle DEF$, $\angle F = 90^\circ$, $d = 7.8$ mm, and $e = 6.9$ mm.

6. A ramp has an angle of elevation of 4.8° and a rise of 1.20 m, as shown at the left. How long is the ramp and what is its run? Round your answers to the nearest hundredth of a metre.



7. Surveyors need to determine the width of a river. Explain how they can do this without crossing the river. Use a diagram to illustrate your answer.

8. Jane is on the fifth floor of an office building 16 m above the ground. She spots her car and estimates that it is parked 20 m from the base of the building. Determine the angle of depression to the nearest degree.

9. A pilot who is heading due north spots two forest fires. The fire that is due east is at an angle of depression of 47° . The fire that is due west is at an angle of depression of 38° . What is the distance between the two fires, to the nearest metre, if the altitude of the airplane is 2400 m?

