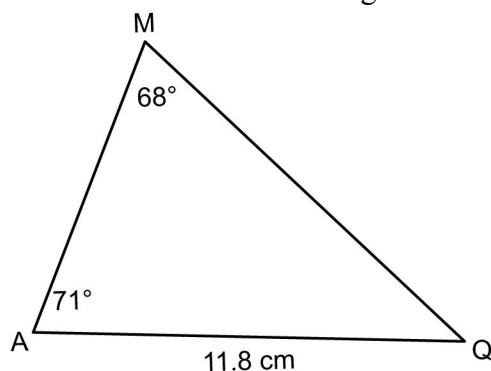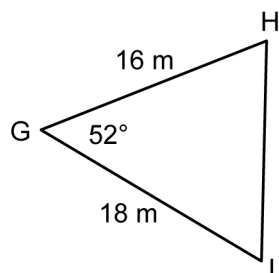Name: _____     Date: _____

# Section 8.4 Practice Master

**1.** Determine whether the primary trigonometric ratios, the sine law, or the cosine law should be used first to solve each triangle.
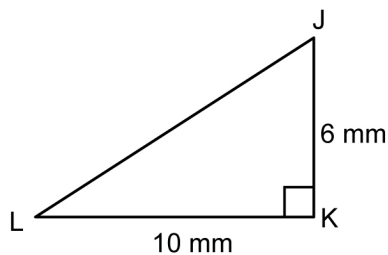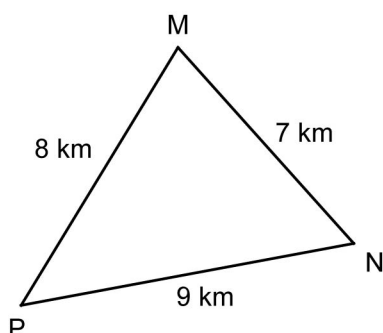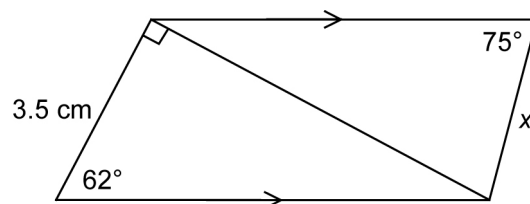
**a)**



**b)**



**c)**



**d)**



**2. a)** Find $x$, to the nearest tenth of a centimetre.



**b)** Find $x$ using a different method.

**3.** Savio is on a hiking trip. On the first section of the hike, he walks 5 km from the Loon Campsite to the Owl Campsite. Then, he turns and hikes 7 km to the Eagle Campsite, making a 68° angle from the first section of the hike. He then returns on the trail to the Loon Campsite.
   **a)** What is the distance from the Eagle campsite to the Loon campsite, to the nearest kilometre?
   **b)** At what angles are the three campsites situated with respect to each other?

**4.** From the top of a cliff that is 70 m in height, the angle of depression of a sailboat on a lake is 41°.
   **a)** Draw a diagram and label the known information.
   **b)** What is the distance from the base of the cliff to the sailboat? Round your answer to the nearest tenth of a metre.

**5.** Micah is standing on the ground between two buildings on the opposite sides of a park. The top of the first building is 152 m from Micah, at an angle of elevation of 38°, while the top of the second building is 175 m from Micah, at an angle of elevation of 53°.

**a)** Draw a diagram and label the known information.

**b)** How far apart are the tops of the two buildings? Round your answer to the nearest metre.

**c)** What is the height of each building? Round your answers to the nearest metre.

**d)** How far is Micah from the bottom of each building? Round your answers to the nearest metre.

**6.** Two cottages are across the lake from each other, as shown in the diagram. What is the distance between the two cottages? Round your answer to the nearest tenth of a kilometre.



cottage 2

1.7 km

42°

cottage 1

1.8 km