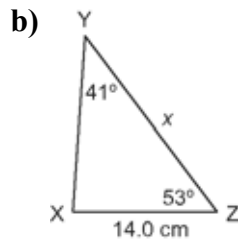
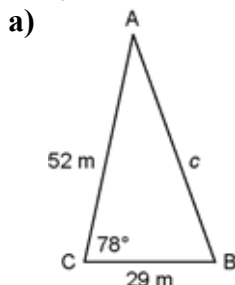
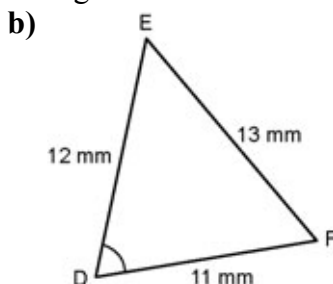
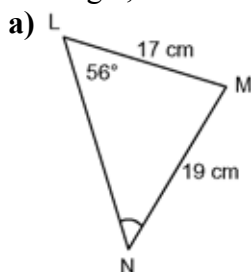


Section 4.6 Make Connections With the Sine Law and the Cosine Law

1. Determine whether the sine law or cosine law is appropriate to find the length of the indicated side. Then, find the length of the side, to the nearest unit.



2. Determine whether the sine law or cosine law is appropriate to find the measure of the marked angle. Then, determine the measure of the angle, to the nearest degree.



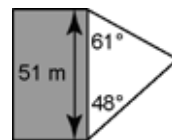
3. Sketch, then solve each triangle. Round your answers to the nearest tenth of a unit.

- a) In $\triangle JKL$, $JK = 9.0$ m, $JL = 5.2$ m, and $\angle J = 73^\circ$.
 b) In $\triangle RST$, $ST = 30$ cm, $\angle R = 35^\circ$, and $\angle T = 56^\circ$.

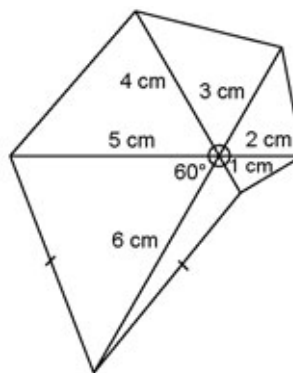
4. Amy, Ben, and Cal start at the same point and begin to walk in different directions. Amy walks due north at 4.0 km/h, Ben walks 50° east of north at 3.5 km/h, and Cal walks 45° west of north at 2.5 km/h.

- a) Sketch a diagram to model this situation.
 b) After 4 h, how far is Amy from each of the others, to the nearest tenth of a kilometre?

5. A farmer plans to build a triangular pen along one side of a barn. The fence will make a 61° angle with the barn at one end and a 48° angle with the barn at the other end. The barn is 51 m in length. What length of fencing is needed, to the nearest metre?



6. From the point where Pierre stands, the doorway to his home is due north. His mailbox is 72° east of north, 4.0 m from his position, and the mailbox is 9.0 m from the doorway.
 a) Sketch a diagram to model this situation.
 b) How much farther will Pierre walk if he walks to the mailbox and continues to the doorway instead of walking straight to the doorway? Round your answer to the nearest tenth of a metre.
7. Determine the perimeter of the hexagon, to the nearest centimetre.



8. A helicopter is flying directly between two aircraft carriers that are 1600 m apart. Carrier A measures the angle of elevation to the helicopter to be 55° and carrier B measures the angle of elevation to the helicopter to be 43° . Determine the distance each carrier is from the helicopter. Round your answer to the nearest metre.