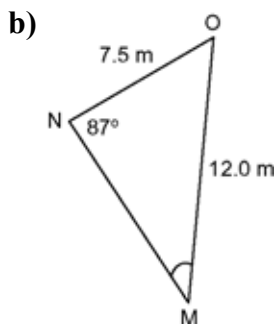
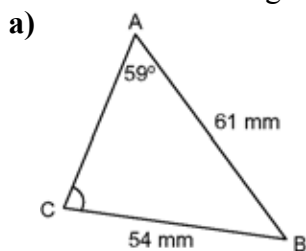
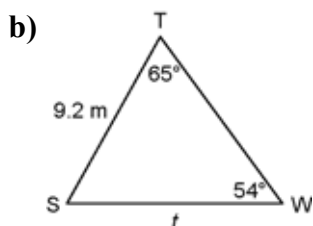
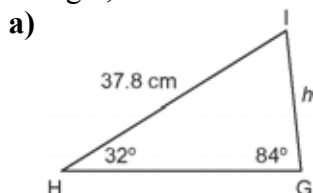


Section 4.4 Investigate the Sine Law

- Give the sine law in two different forms.
- Find the measure of the marked angle, to the nearest tenth of a degree.



- Find the length of the indicated side in each triangle, to the nearest tenth of a unit.



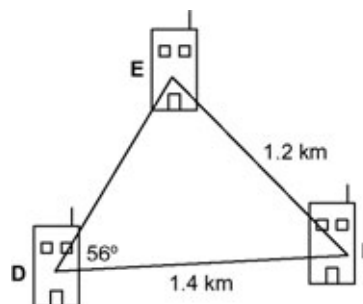
- Sketch, then solve each triangle. Round your answers to the nearest tenth of a unit.

a) In $\triangle PQR$, $\angle R = 65^\circ$, $q = 60$ cm, and $r = 84$ cm.

b) In $\triangle XYZ$, $\angle X = 85^\circ$, $y = 80$ mm, and $\angle Y = 30^\circ$.

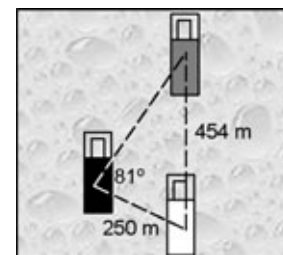
- A weather balloon is between two observation points. The angle of elevation from point A to the balloon is 60.3° and the angle of elevation from point B to the balloon is 66.8° . The two observation points are 35 km apart. What is the distance from each observation point to the balloon? Round your answers to the nearest kilometre.

- A cell phone network consists of cell sites in elevated locations. Cell sites are sometimes placed in a triangular pattern on rooftops. The planned measurements between three cell sites are shown.



Determine the remaining lengths and angle measures. Round lengths to the nearest tenth of a kilometre.

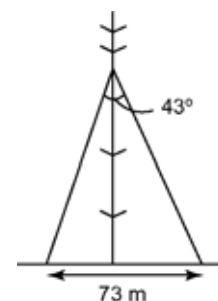
- Three coloured buoys form a triangle in a harbour.



Find the distance between the black and grey buoys, to the nearest metre.

- In acute triangle ABC, sides AB and AC both have a length of 6 cm. Angle A has a measure of 60° . Is it possible to determine the length of side BC using the sine law? Explain.

- Two support wires attached to a radio tower form an isosceles triangle with a base length of 73 m. The opposite angle measures 43° .



Use the sine law to determine the lengths of the support wires, to the nearest metre.