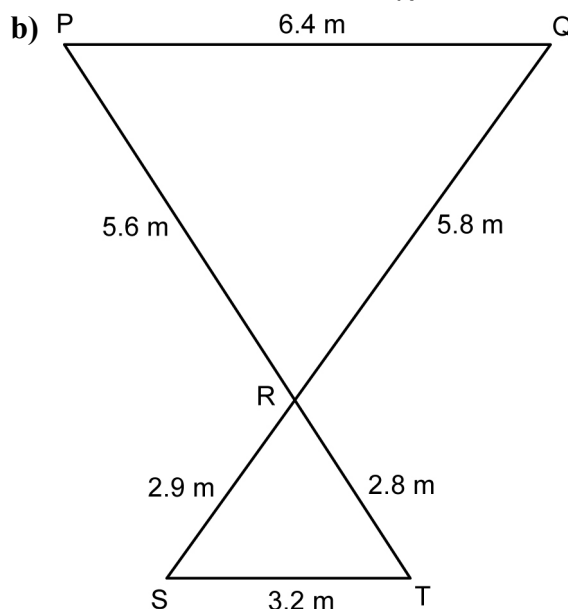
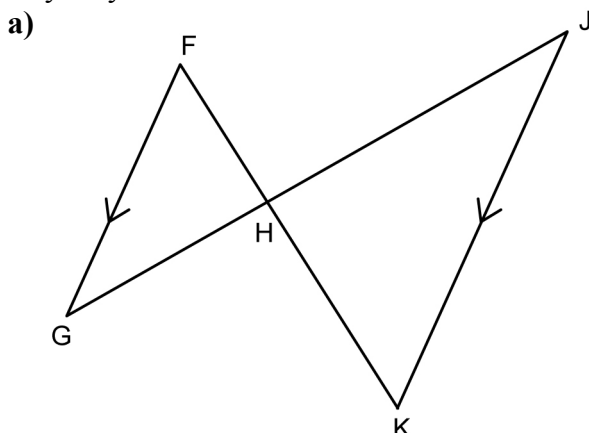


## Chapter 7 Review

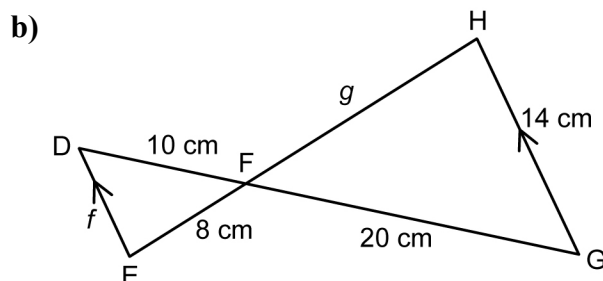
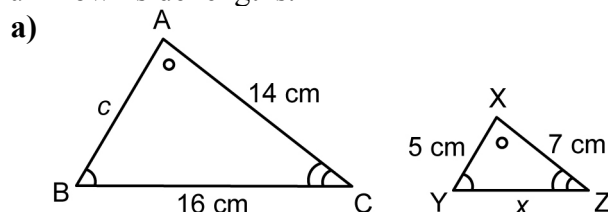
### 7.1 Investigate Properties of Similar Triangles

- Draw two triangles that are similar.
  - Draw two hexagons that are congruent.
- Name the two similar triangles and explain why they are similar.

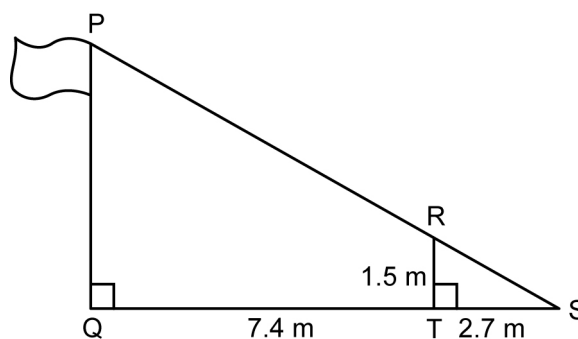


### 7.2 Use Similar Triangles to Solve Problems

- The pairs of triangles are similar. Find the unknown side lengths.



- The tips of the shadows of a flagpole and a 1.5-m fence post meet at the point S. The following lengths are measured:  $ST = 2.7$  m and  $QT = 7.4$  m. Use this information to find the height of the flagpole. Round your answer to the nearest tenth of a metre.



- Nimo has constructed a deck in the shape of an equilateral triangle with each side length equal to 2 m. If she enlarges her deck to a similar shape whose side lengths are doubled, what will the area of the new deck be?

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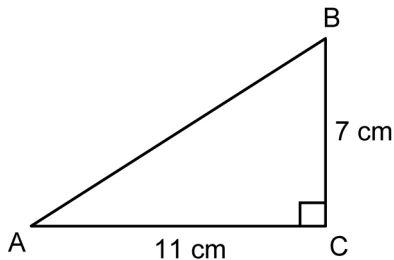
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**BLM 7-15**  
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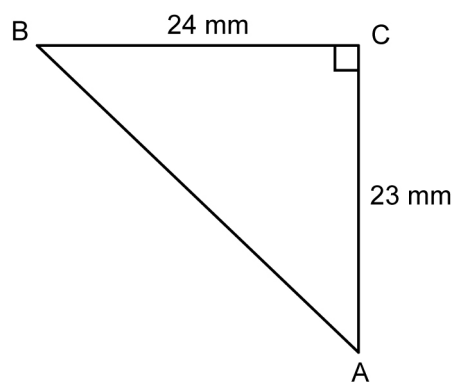
### 7.3 The Tangent Ratio

6. Find the tangent of  $\angle A$ , to four decimal places.

a)



b)



7. Find the measure of each angle, to the nearest degree.

a)  $\tan \theta = 0.8173$

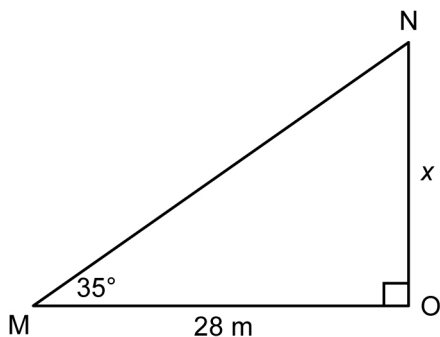
b)  $\tan E = 1.5413$

c)  $\tan \theta = \frac{13}{18}$

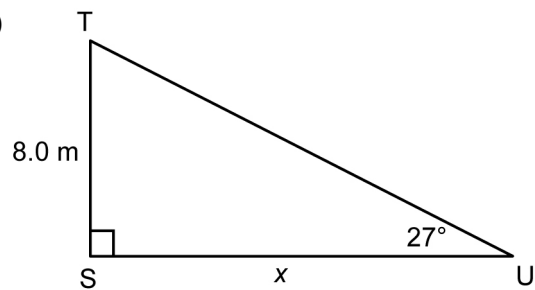
d)  $\tan B = \frac{23}{12}$

8. Find  $x$ , to the nearest tenth of a metre.

a)



b)

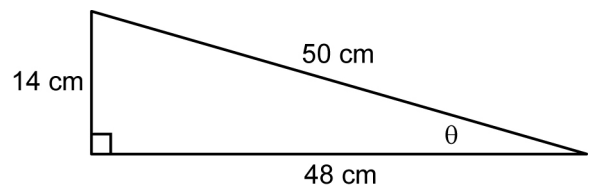


9. The angle of elevation of a ramp is  $4^\circ$ . The horizontal length of the ramp is 18 m. What is the vertical height of the ramp, to the nearest tenth of a metre?

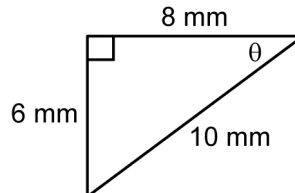
### 7.4 The Sine and Cosine Ratios

10. Find  $\sin \theta$ ,  $\cos \theta$ , and  $\tan \theta$  for each triangle, expressed as fractions in lowest terms.

a)



b)



11. Find the measure of each angle, to the nearest degree.

a)  $\sin \theta = 0.4152$

b)  $\sin T = 0.8731$

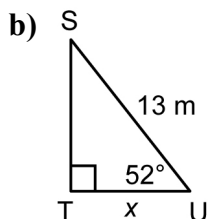
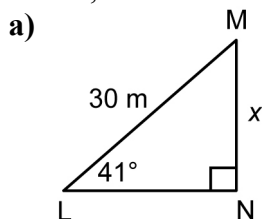
c)  $\cos \theta = \frac{11}{15}$

d)  $\cos S = \frac{3}{8}$

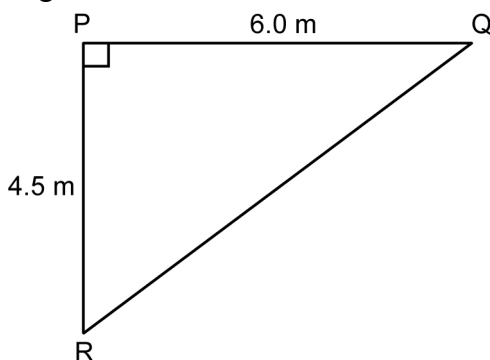
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12. Find  $x$ , to the nearest tenth of a metre.

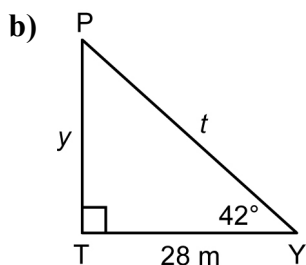
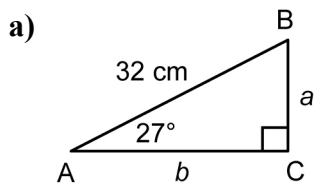


13. Solve  $\triangle PQR$ . Round angles to the nearest degree.

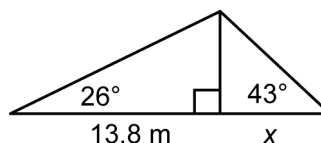


### 7.5 Solve Problems Involving Right Triangles

14. Solve each triangle. Round side lengths to the nearest tenth of a unit.



15. Find the length of  $x$ , to the nearest tenth of a centimetre.



16. The Carziz Tunnel cuts through Mount Mainet. At the start of the tunnel, the angle of elevation of the top of Mount Mainet is  $38^\circ$ . At the end of the tunnel, the angle of elevation of the top of Mount Mainet is  $42^\circ$ . The height of Mount Mainet above the tunnel passage is  $584\text{ m}$ . How long is the Carziz tunnel through Mount Mainet? Round your answer to the nearest metre.