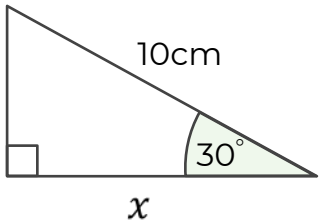
Use Sine and Cosine to find a length

Maths

Miss Davies

Use Sine and Cosine to find a length

1. Complete the working out to find the length labelled x to 1 decimal place.



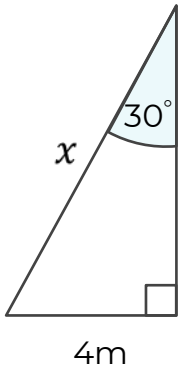
$$\cos(\theta) = \frac{adj}{hyp}$$

$$\cos(\square) = \frac{x}{\square}$$

$$\square \times \cos(\square) = x$$

$$\square = x$$

2. Complete the working out to find the length labelled x to 1 decimal place.



$$\sin(\theta) = \frac{opp}{hyp}$$

$$\sin(\square) = \frac{\square}{x}$$

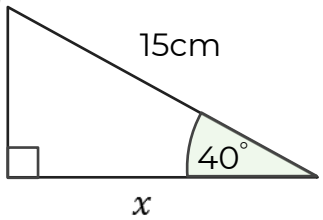
$$x = \frac{4}{\sin(\square)}$$

$$x = \square$$

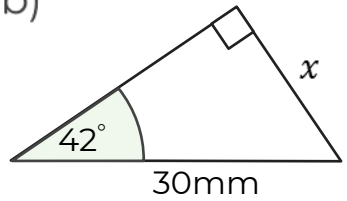
Use Sine and Cosine to find a length

3. Find the lengths labelled x.
Give your answers correct to 3 significant figures.

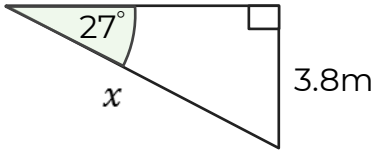
a)



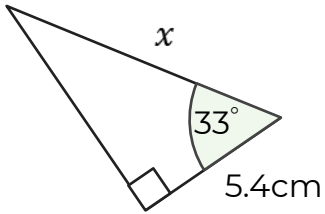
b)



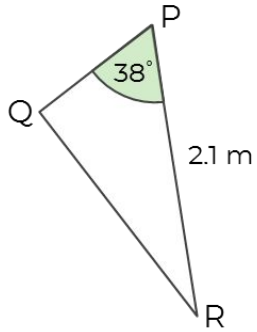
c)



d)



4. Spot the mistake.



$$\sin(38) = \frac{PQ}{2.1}$$

$$2.1 \times \sin(38) = PQ$$

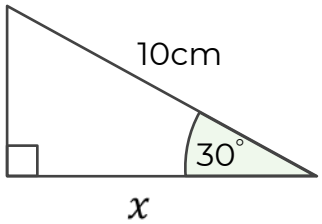
$$1.29\ m = PQ$$

5. A ladder is placed against a wall. The base is 1.6 m from the bottom of the wall, at an angle of 60° with the floor.
What is the length of the ladder?

Answers

Use Sine and Cosine to find a length

1. Complete the working out to find the length labelled x to 1 decimal place.



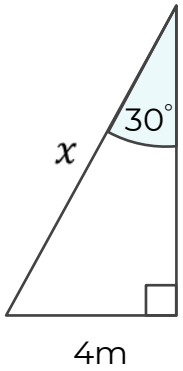
$$\cos(\theta) = \frac{adj}{hyp}$$

$$\cos(\boxed{30}) = \frac{x}{\boxed{10}}$$

$$\boxed{10} \times \cos(\boxed{30}) = x$$

$$\boxed{8.7\text{cm}} = x$$

2. Complete the working out to find the length labelled x to 1 decimal place.



$$\sin(\theta) = \frac{opp}{hyp}$$

$$\sin(\boxed{30}) = \frac{\boxed{4}}{x}$$

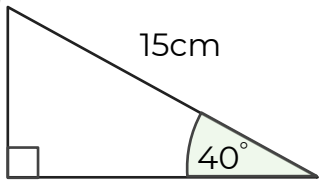
$$x = \frac{4}{\sin(\boxed{30})}$$

$$x = \boxed{8\text{m}}$$

Use Sine and Cosine to find a length

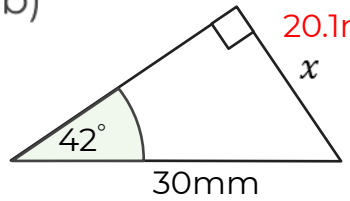
3. Find the lengths labelled x.
Give your answers correct to 3 significant figures.

a)



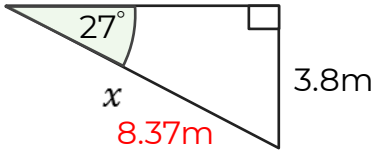
x 11.5cm

b)



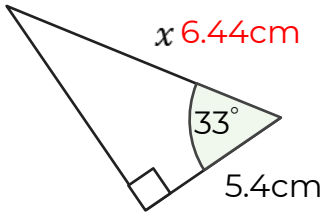
20.1mm
x

c)



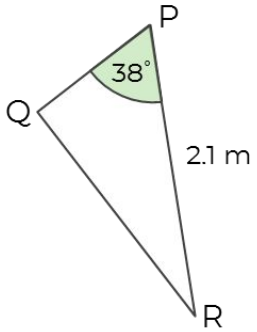
8.37m

d)



x 6.44cm

4. Spot the mistake.



$$\sin(38) = \frac{PQ}{2.1}$$

$$2.1 \times \sin(38) = PQ$$

$$1.29\ m = PQ$$

Should have used cosine

5. A ladder is placed against a wall. The base is 1.6 m from the bottom of the wall, at an angle of 60° with the floor.
What is the length of the ladder? 3.2 m