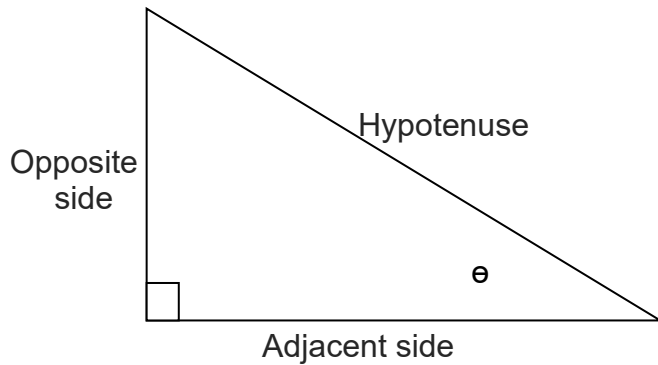


# TRIGONOMETRY – COS RULE

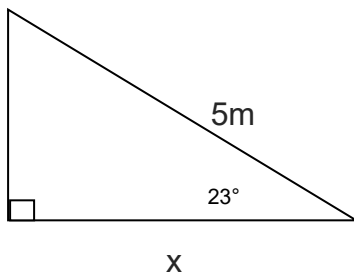
## STEP BY STEP



$$\cos \theta = \frac{\text{Adjacent}}{\text{Hypotenuse}}$$

### FIND THE ADJACENT SIDE (X ON THE TOP OF THE FRACTION)

Q1. The angled roof of a house is 5 metres long. It is at an angle of  $23^\circ$  to the horizontal. How wide is the roof? Complete the working below.



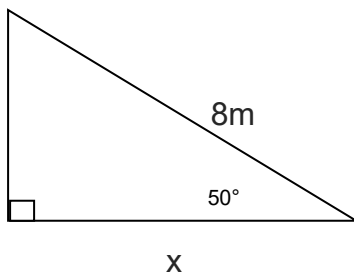
$$\cos \theta = \frac{A}{H}$$

$$\cos 23^\circ = \frac{x}{5}$$

$$x = \cos 23^\circ \times 5$$

$$x =$$

Q2. A pipe from a water tank stretches a distance of 8 metres from the tank. The angle it makes with the ground is  $50^\circ$ . How far from the base of the water tank is the bottom of the pipe? Complete the working below.



$$\cos \theta = \frac{A}{H}$$

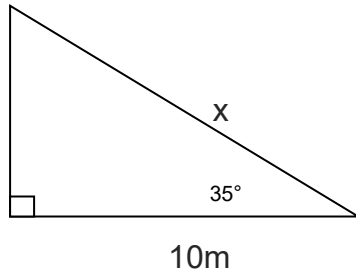
$$\cos 50^\circ = \frac{x}{8}$$

$$x =$$

$$x =$$

## FIND THE HYPOTENUSE (X ON THE BOTTOM OF THE FRACTION)

Q3. The horizontal beam of a roof is 10 metres long. It is at an angle of  $35^\circ$  to the horizontal. What is the sloped length of the roof? Complete the working below.



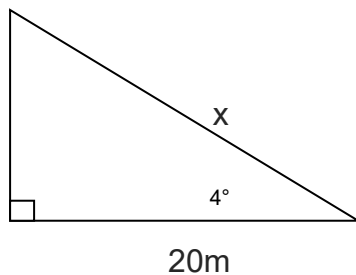
$$\cos \theta = \frac{A}{H}$$

$$\cos 35^\circ = \frac{10}{x}$$

$$x = \frac{10}{\cos 35^\circ}$$

$$x =$$

Q4. The horizontal length of a wheelchair ramp is 20 metres long. It is at an angle of  $4^\circ$  to the horizontal. What is the sloped length of the ramp? Complete the working below.



$$\cos \theta = \frac{A}{H}$$

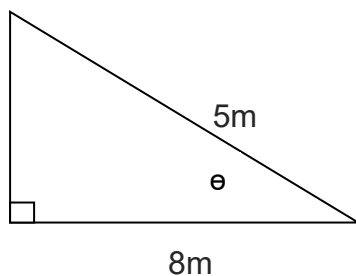
$$\cos 4^\circ = \frac{20}{x}$$

$$x =$$

$$x =$$

## FIND THE ANGLE

Q5. The angled roof of a house is 5 metres long. The horizontal length of the roof is 8 metres. Find the slope of the roof. Complete the working below.



$$\cos \theta = \frac{A}{H}$$

$$\cos \theta = \frac{8}{5}$$

$$\theta = \cos^{-1} ( 8 \div 5 )$$

$$\theta =$$