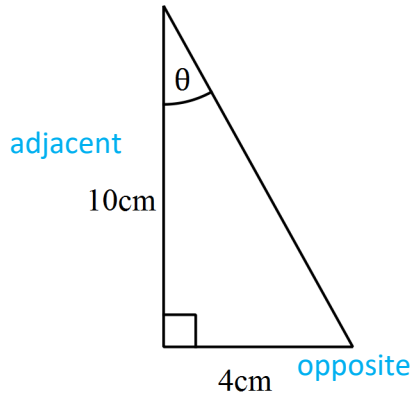




When you start with a diagram you will need to use the method below

1. Choose which formula to use (sin, cos or tan).
2. Substitute in the values you have.
3. Solve using algebra skills.

Example 4



1. We have the *adjacent* and the *opposite* sides so we use

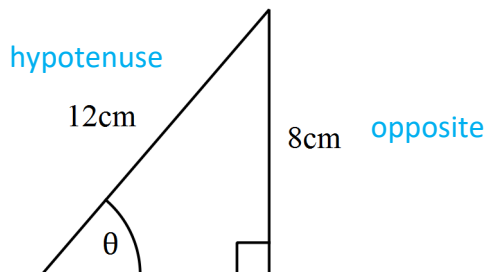
$$\tan \theta = \frac{\text{opp}}{\text{adj}}$$

2. Substitute in the values
 $\tan(\theta) = \frac{4}{10} = 0.4$

3. Solve $\theta = \tan^{-1}(0.4)$
 $= 21.80^\circ$

Answer is $\theta = 21.80^\circ$

Example 5



1. We have the side *opposite* θ and the *hypotenuse* so we use

$$\sin \theta = \frac{\text{opp}}{\text{hyp}}$$

2. Substitute in the values
 $\sin(\theta) = \frac{8}{12}$

3. Solve
 $\sin^{-1}\left(\frac{8}{12}\right) = 41.81$
 $\theta = 41.81^\circ$

NB. This time we left $\frac{8}{12}$ as a fraction. If we converted it to a decimal we would need to either keep lots of decimal places, or round it and lose accuracy. It is easier to leave it as a fraction. The fraction can easily be put into your calculator.