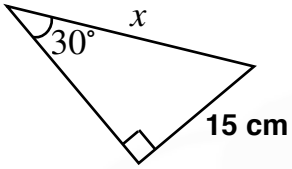
Mixed trigonometry problems

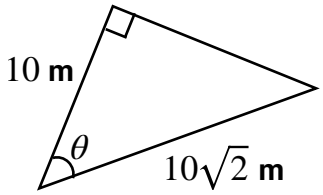
Starter

1. **(Review of last lesson)** Without using a calculator, find the marked length or angle in these right-angled triangles, giving your answers exactly and rationalising surds where needed:

(a)



(b)



Notes

When completing worded trigonometric questions, always draw a diagram.

E.g. 1 A ladder of length 5 m stands against a wall. It makes an angle of $65°$ with the horizontal. How far up the wall does it reach?

E.g. 2 The base of a rectangle is 8 cm long. The diagonal from top to bottom makes an angle of $74°$ with the horizontal base. Calculate the area of the rectangle to 1 d.p..

E.g. 3 (a) Calculate the size of one interior angle of a regular pentagon.
Hint: Sum of interior angles $= 180(n-2)$

(b) Find the shortest distance from the centre of a regular pentagon of side 6 cm, to one of the sides. Give your answer exactly.

(c) Hence find the area of the regular pentagon.

Working: (a)

$$\begin{aligned}\text{Sum of interior angles} &= 180(n-2)\\ &= 180(5-2)\\ &= 540°\end{aligned}$$

$$\text{Size of one interior angle} = \frac{540°}{5} = 108°$$

Video: https://www.youtube.com/watch?v=uVSGy_no7ul

Solutions to Starter and E.g.s

Exercise

9-1 class textbook:	p327 M10.11 Qu Qu 1-23 odd
A*-G class textbook:	p290 M10.10 Qu 1-25 odd
9-1 homework book:	p114 M10.11 Qu 1-12
A*-G homework book:	p83 M10.10 Qu 1-11 (Qu 11 requires circle theorems)

Summary

When completing worded trigonometric questions, always draw a diagram.