1 **(a)** Sketch the graph of $y = \sin x$ for $0° \leqslant x \leqslant 360°$.

[2]

1 **(b)** Solve the equation $3 \sin x + 1 = 0$ for $0° \leqslant x \leqslant 360°$.

$x =$ .... or $x =$ .... [3]

[Total: 5]

2 Solve the equation $3 \sin x + 3 = 1$ for $0° \leqslant x \leqslant 360°$.

$x =$ .... or $x =$ .... [3]

[Total: 3]

3   Find all the solutions of $4\sin x = 3$ for $0° \leqslant x \leqslant 360°$.

.... [2]

[Total: 2]

4   **(a)**   Sketch the graph of $y = \tan x$ for $0° \leqslant x \leqslant 360°$.
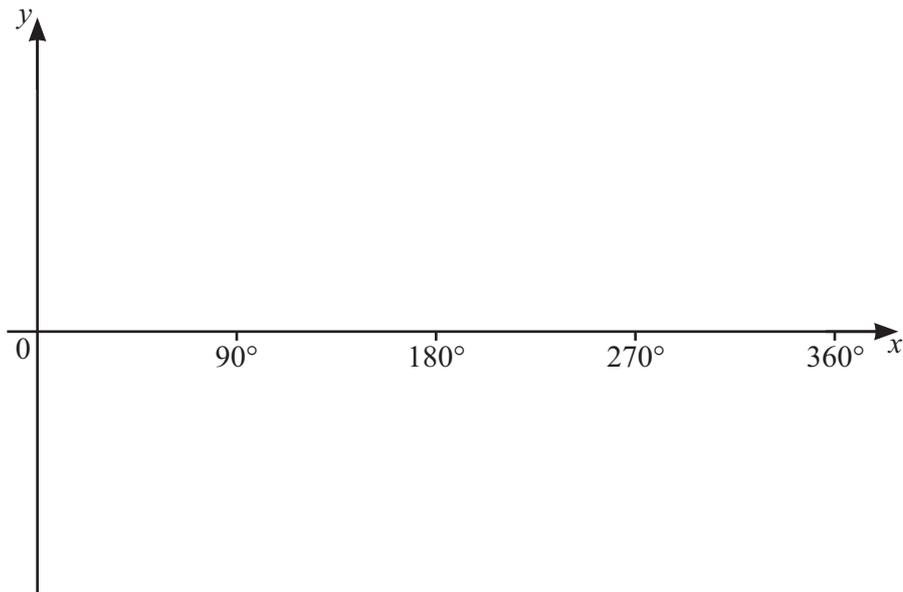
[2]

4   **(b)**   Solve the equation $5\tan x = 1$ for $0° \leqslant x \leqslant 360°$.

$x =$ .... or $x =$ .... [2]

[Total: 4]

5 Solve $4 \sin x - 1 = 2$ for $0° \leqslant x \leqslant 360°$.

$x =$ .... and $x =$ ....   [3]

[Total: 3]

6
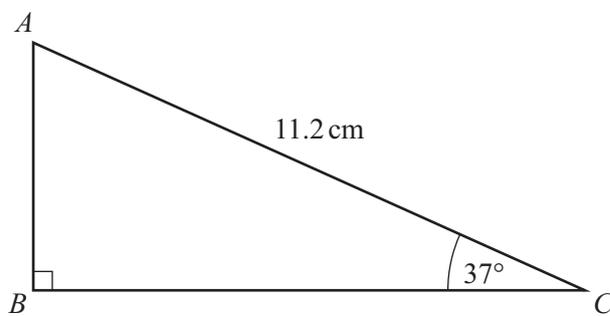
Calculate *AB*.

Answer AB = ... cm   [2]

[Total: 2]

7

NOT TO SCALE

5 cm

2 cm

$x°$
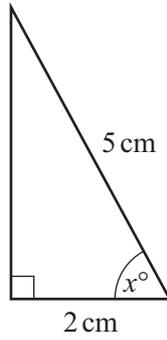
Calculate the value of x.

Answer x = ...   [2]

[Total: 2]

8

E

6 cm

D

NOT TO SCALE

A

12 cm

C

6 cm

B
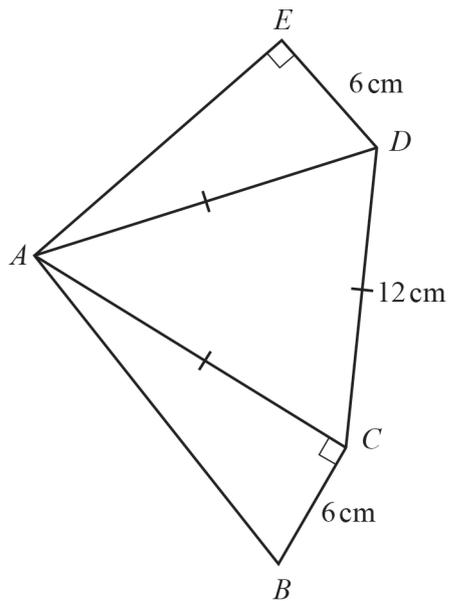
In the pentagon *ABCDE*, angle *ACB* = angle *AED* = 90°.
Triangle *ACD* is equilateral with side length 12 cm.
DE = *BC* = 6 cm.

(a) Calculate angle *BAE*.

Angle *BAE* = ... [4]

(b) Calculate *AB*.

AB = ... cm [2]

(c) Calculate *AE*.

AE = ... cm [3]

(d) Calculate the area of the pentagon.

.... cm² [4]

[Total: 13]

9
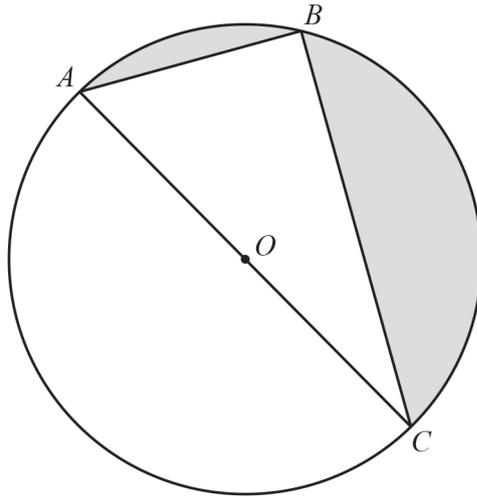
NOT TO
SCALE

A, *B* and *C* are points on the circumference of a circle, centre *O*.

(a) Give a geometrical reason why angle *ABC* = 90°.

.... [1]

(b) *AB* = 20 cm and *AC* = 52 cm.

(i) Use trigonometry to calculate angle *BAC*.

Angle *BAC* = ... [2]

(ii) Show that *BC* = 48 cm.

[2]

(iii) Work out the area of triangle *ABC*.

.... cm² [2]

(iv) Work out the total shaded area.

.... cm² [3]

[Total: 10]

10
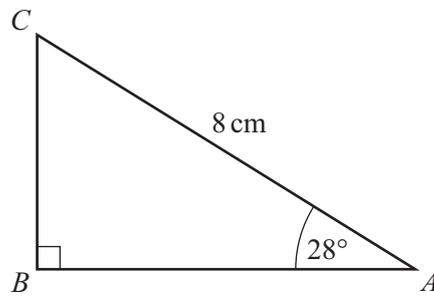
Calculate the length of *AB*.

Answer AB = ... cm [2]

[Total: 2]