Trigonometry – 2022 IGCSE 0580
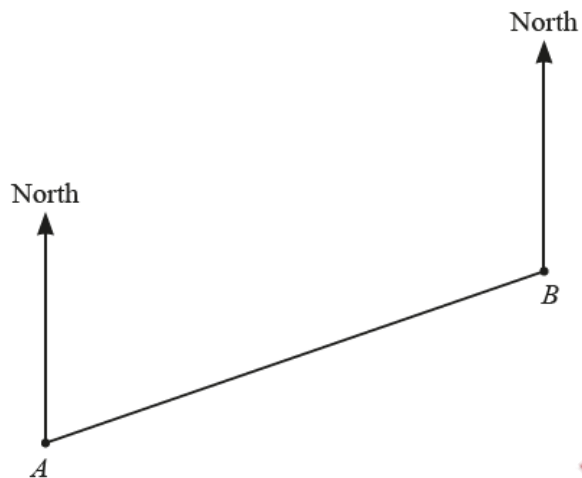
1. June/2022/Paper-11/No.4

The scale drawing shows the positions of town A and town B.
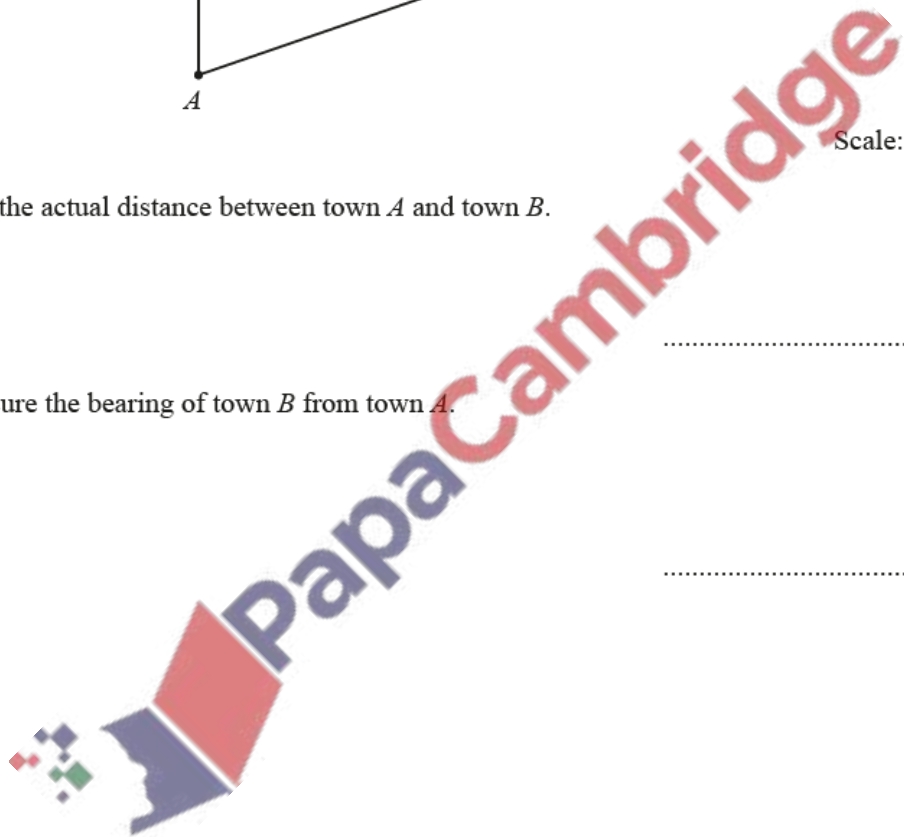The scale is 1 cm represents 15 km.

North

North

B

A

Scale: 1 cm to 15 km

(a) Find the actual distance between town A and town B.

.... km [2]

(b) Measure the bearing of town B from town A.

.... [1]

2. June/2022/Paper-11/No.15
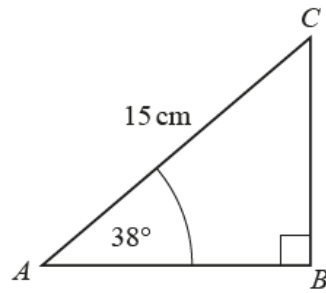
NOT TO SCALE

The diagram shows a right-angled triangle, *ABC*.
AC = 15 cm and angle *BAC* = 38°.

Calculate *BC*.

BC = ... cm [2]

3. June/2022/Paper_12/No.22
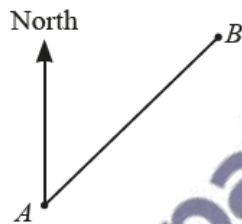
NOT TO SCALE

The bearing of *B* from *A* is 059°.

Work out the bearing of *A* from *B*.

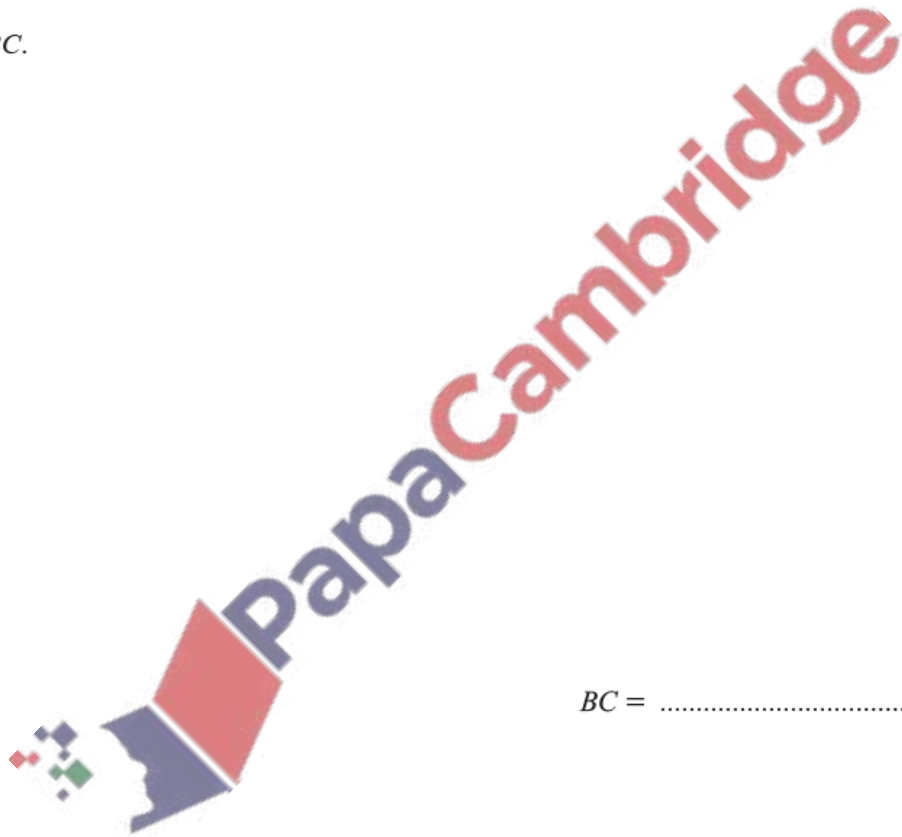... [2]

4. June/2022/Paper_12/No.24
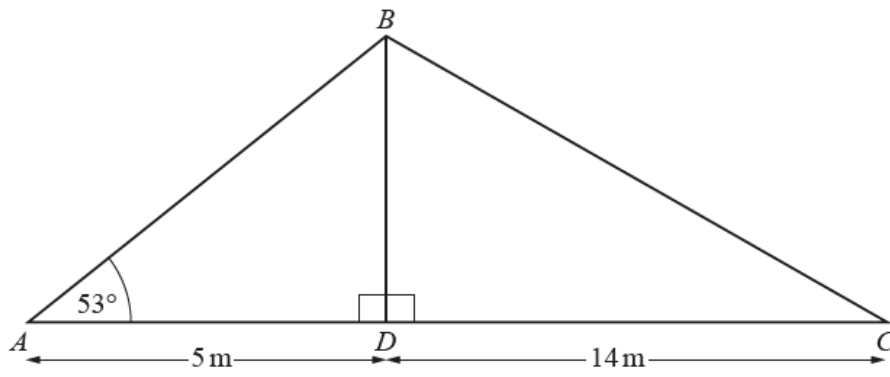
NOT TO SCALE
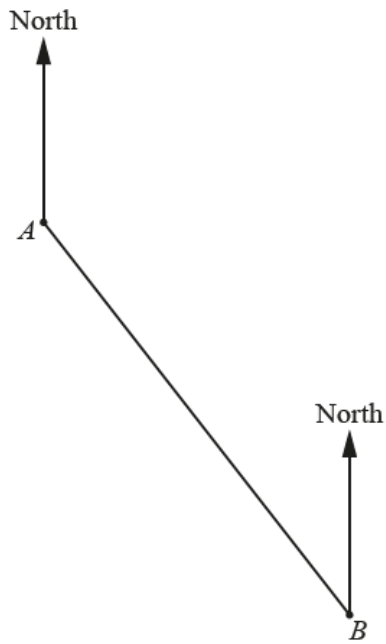
The diagram shows two right-angled triangles, ABD and BCD.
$AD = 5\,\text{m}$, $DC = 14\,\text{m}$ and angle $BAD = 53°$.

Calculate BC.

$BC =$ .... m [4]

3

5. June/2022/Paper_13/No.6

North

North

A

B

Measure the bearing of point *B* from point *A*.

.... [1]

6. June/2022/Paper-22/No.9
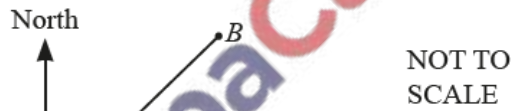
North

B

NOT TO
SCALE

A

The bearing of *B* from *A* is 059°.

Work out the bearing of *A* from *B*.

.... [2]

4

7.

The bearing of B from A is $x°$.
The bearing of A from B is $y°$.
$x:y=2:7$

Calculate the value of y.

North

North

NOT TO
SCALE

B

$y°$

$x°$

A

$y =$ .... [3]

5

8.
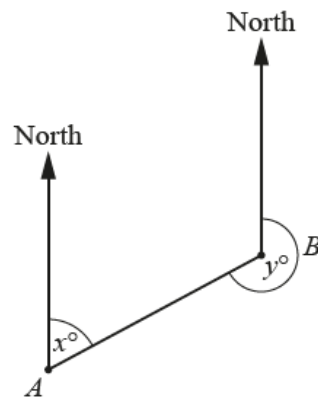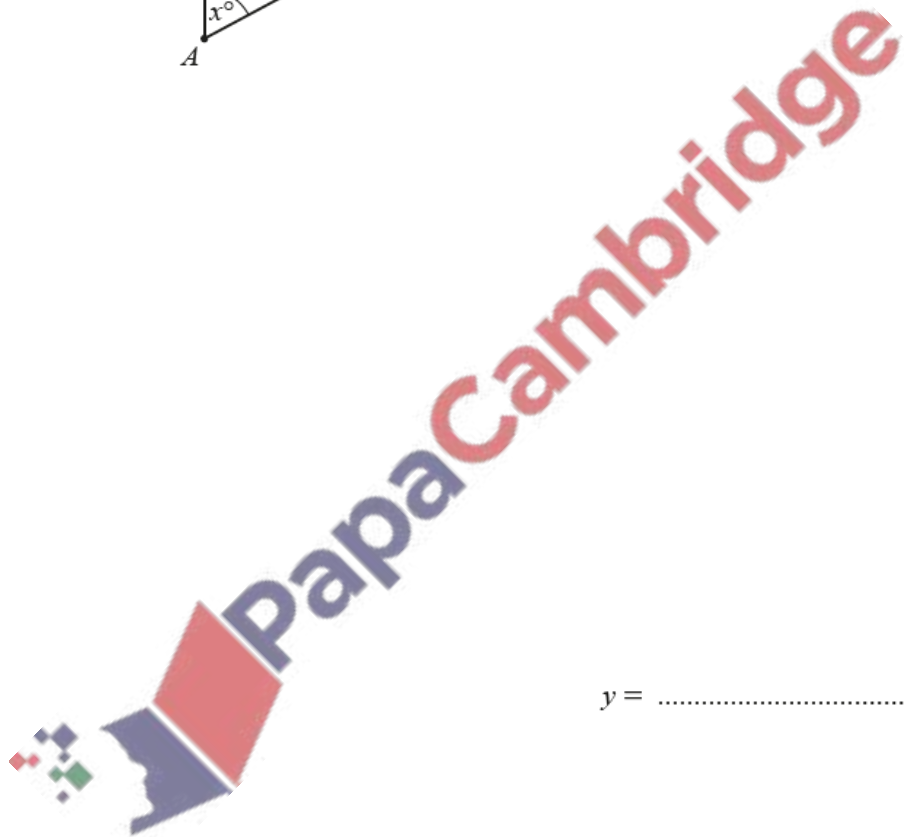
Solve the equation $3\sin x + 3 = 1$ for $0° \leqslant x \leqslant 360°$.

$x = $ .... or $x = $ .... [3]
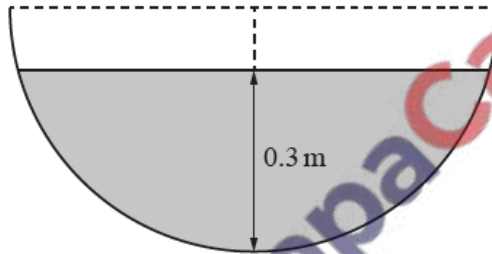
(b)

NOT TO SCALE

4 m
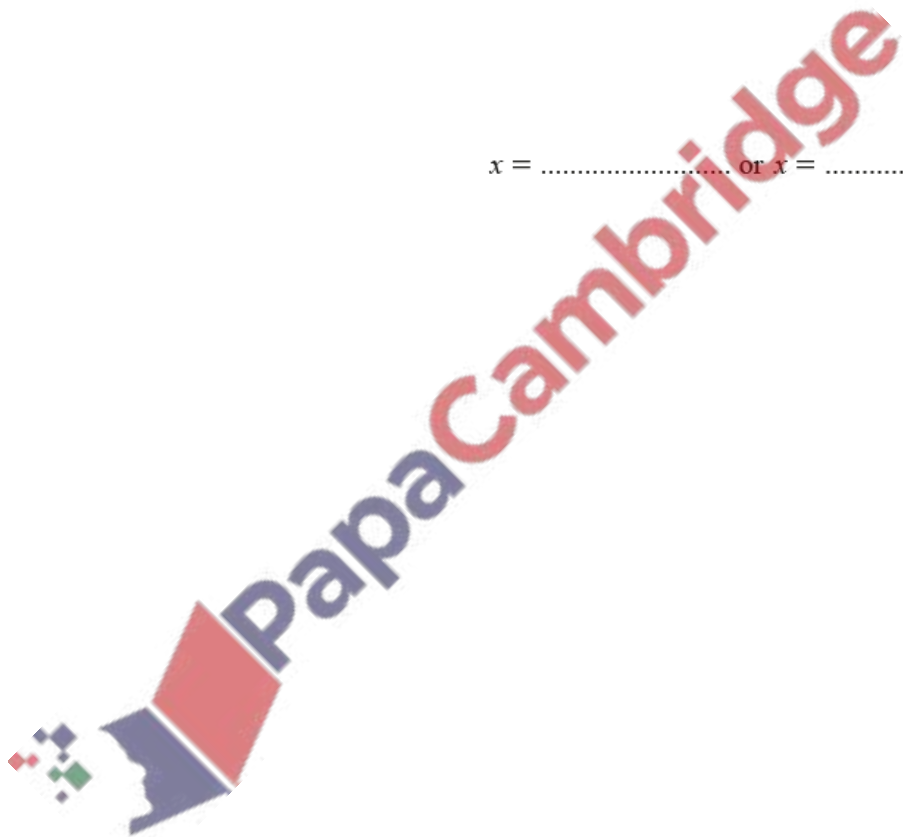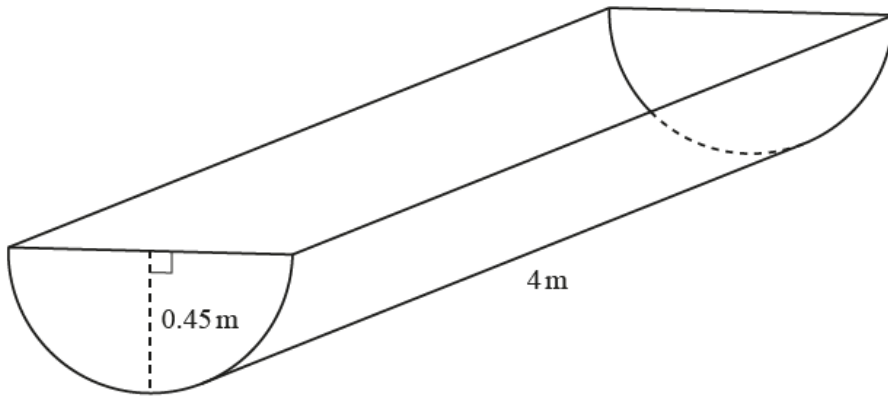
0.45 m

The diagram shows a horizontal container for water with a uniform cross-section.
The cross-section is a semicircle.
The radius of the semicircle is 0.45 m and the length of the container is 4 m.

(i) Calculate the volume of the container.

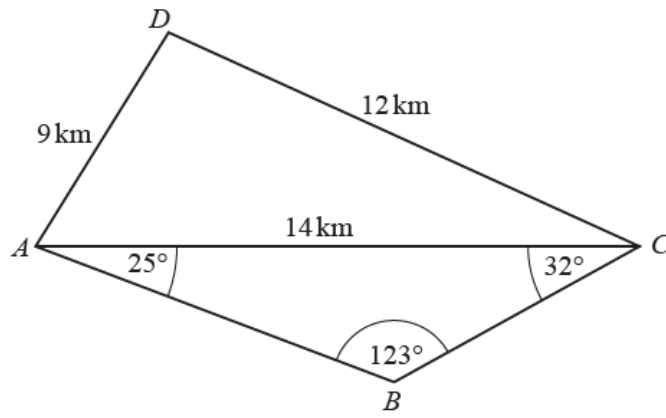..................................... m^3 [2]

(ii)

NOT TO SCALE

0.3 m

The greatest depth of the water in the container is 0.3 m.
The diagram shows the cross-section.

Calculate the number of litres of water in the container.
Give your answer correct to the nearest integer.

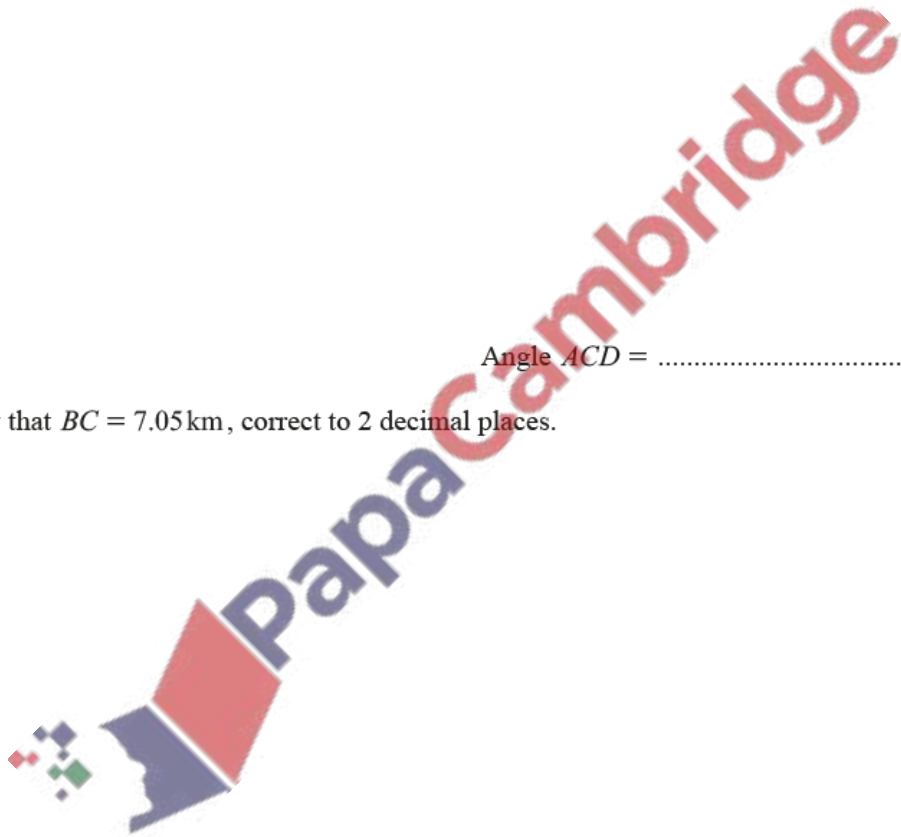..................................... litres [6]

(a) Calculate angle ACD.

Angle ACD = ... [4]

(b) Show that $BC = 7.05\,\text{km}$, correct to 2 decimal places.

[3]

(c) Calculate the shortest distance from B to AC.

.... km [3]

(d) Calculate the length of the straight line BD.

$BD = $ .... km [4]

(e) C is due east of A.

Find the bearing of D from C.

.... [2]
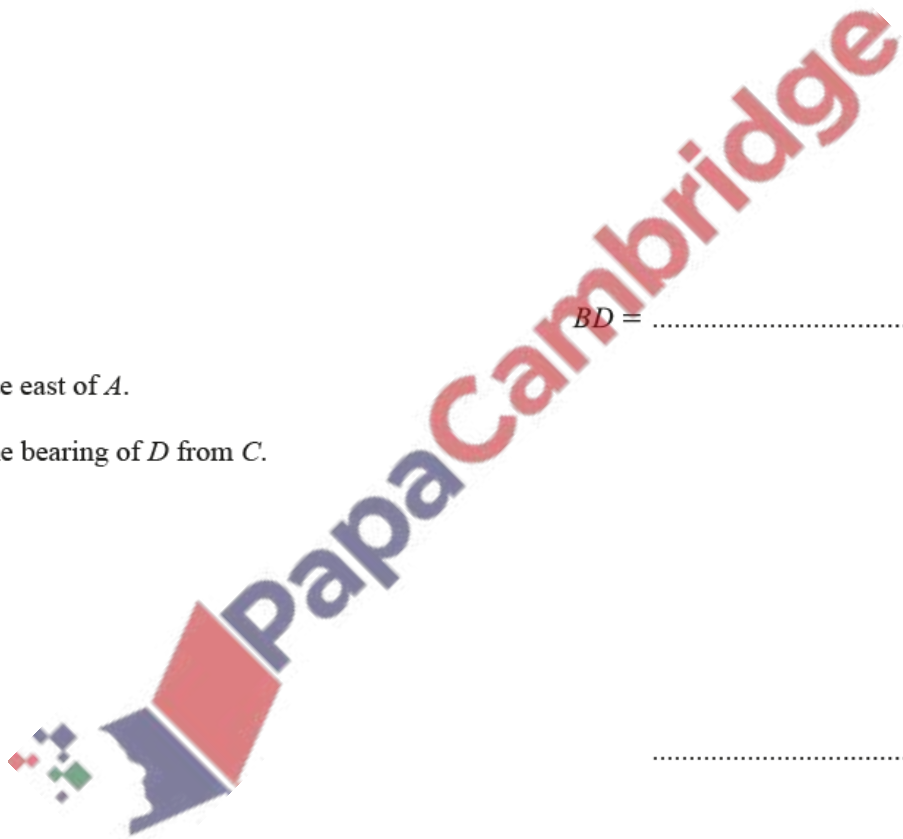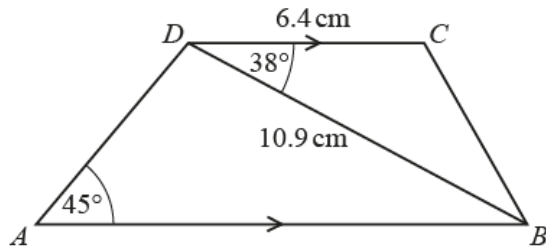
$ABCD$ is a trapezium with DC parallel to AB.
$DC = 6.4$ cm, $DB = 10.9$ cm, angle $CDB = 38°$ and angle $DAB = 45°$.

(a) Find CB.

$CB =$ .... cm **[3]**

(b) (i) Find angle ADB.

Angle $ADB =$ .... **[1]**

(ii) Find AB.

$AB =$ .... cm **[3]**

(c) Calculate the area of the trapezium.

.... cm^2 **[3]**
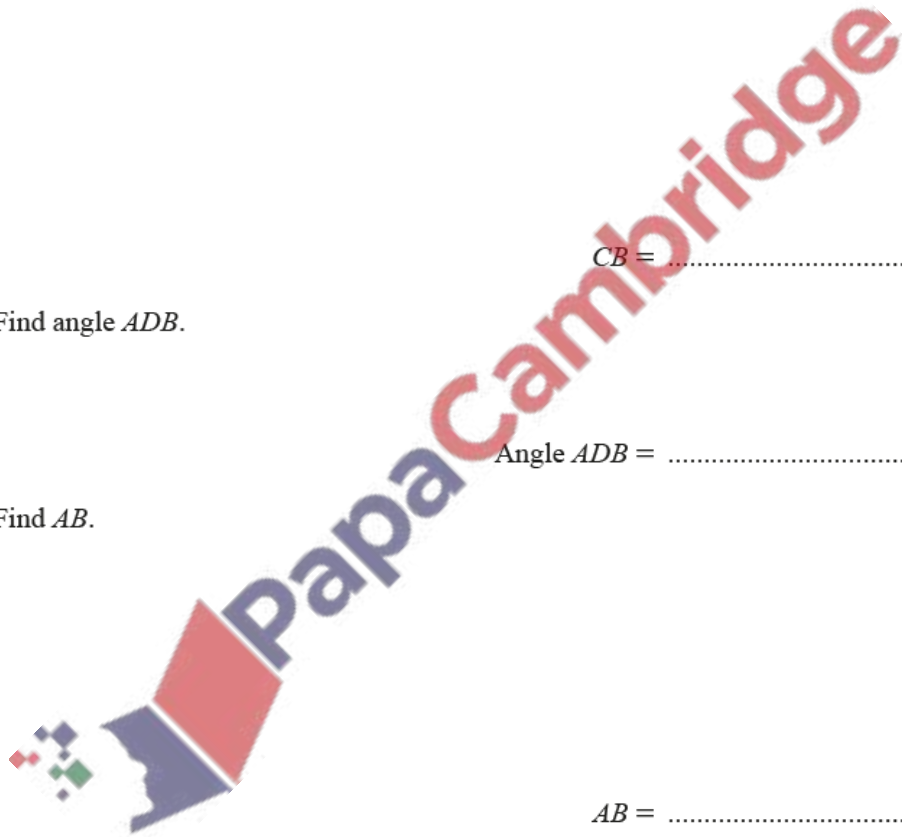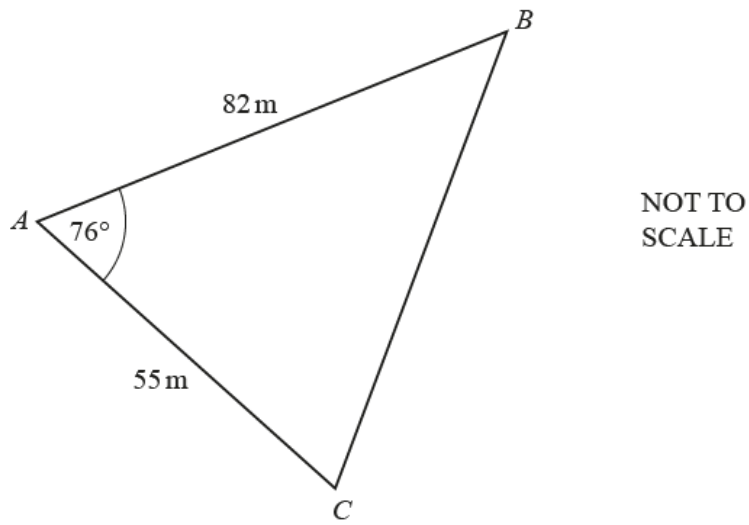
The diagram shows a field ABC.

(a) Calculate BC.

$BC =$ .... m [3]

(b) Calculate angle ACB.

Angle $ACB =$ .... [3]
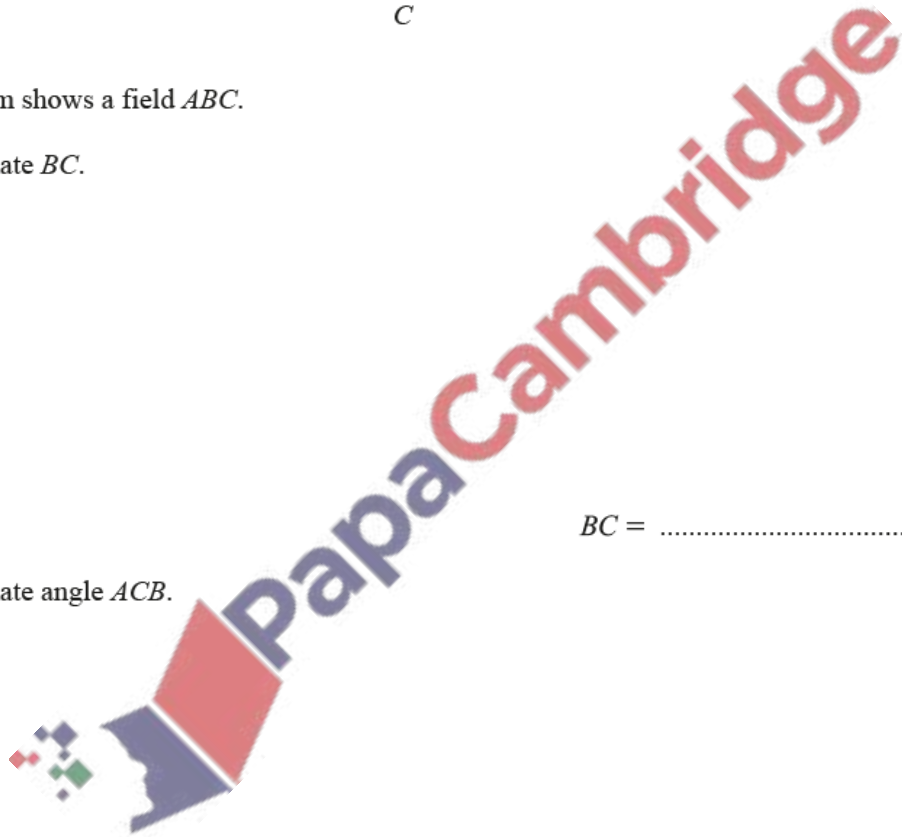
(c) A gate, G, lies on AB at the shortest distance from C.

Calculate AG.

$AG =$ .... m [3]

(d) A different triangular field PQR has the same area as ABC.
$PQ = 90\,\text{m}$ and $QR = 60\,\text{m}$.

Work out the two possible values of angle PQR.
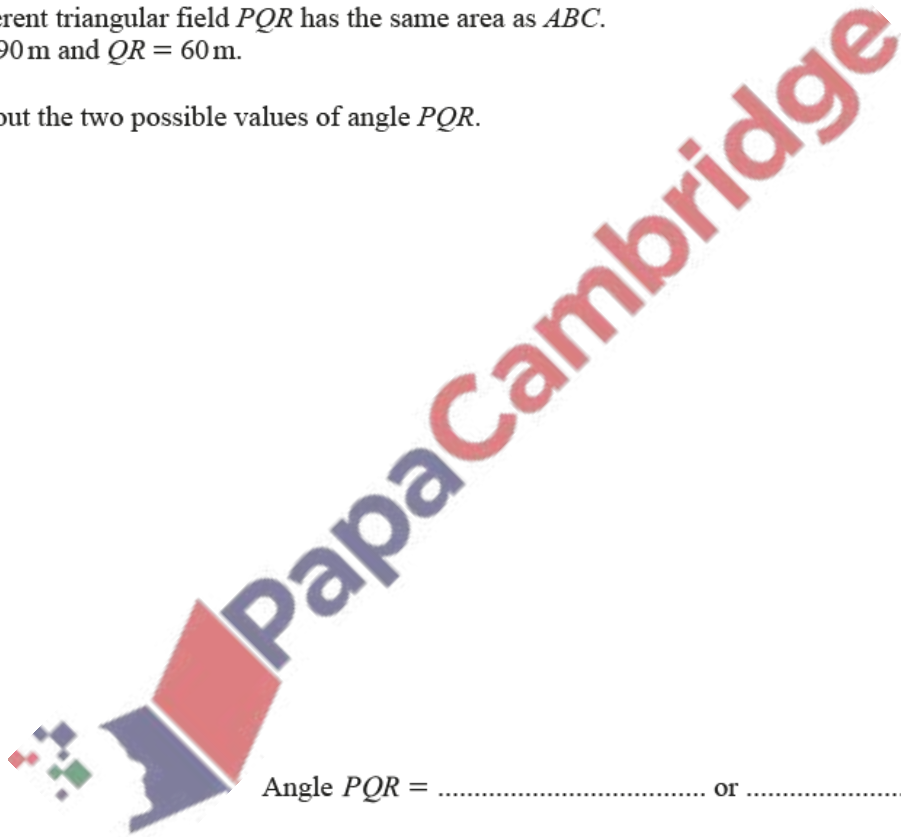
Angle $PQR =$ .... or .... [5]
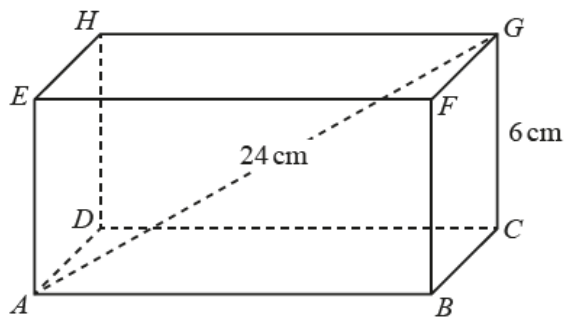
The diagram shows a cuboid $ABCDEFGH$.
$CG = 6\,cm$, $AG = 24\,cm$ and $AB = 2BC$.

(a) Calculate AB.

$AB = $ .... cm [4]

(b) Calculate the angle between AG and the base $ABCD$.

.... [3]