IGCSE · Cambridge (CIE) · Maths

41 mins 10 questions

Non-Calculator Questions

Right-Angled Triangles (Pythagoras & Trigonometry)

Pythagoras Theorem / SOHCAHTOA / Angles of Elevation & Depression / Exact Trig Values

Medium (3 questions)	/12
Hard (3 questions)	/11
Very Hard (4 questions)	/18
Total Marks	**/41**

Scan here to return to the course
or visit savemyexams.com

Medium Questions

1 Here is a rectangle.

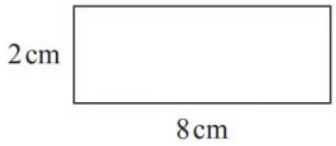


Diagram **NOT** accurately drawn

The 8-sided shape below is made from 4 of these rectangles and 4 congruent right-angled triangles.

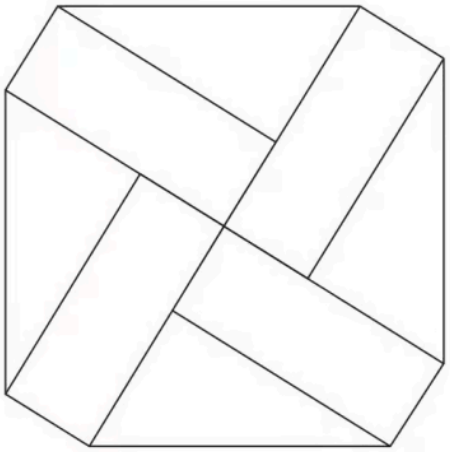


Diagram **NOT** accurately drawn

Work out the perimeter of the 8-sided shape.

You must show all your working.

(5 marks)

2 Triangle ABC has perimeter 20 cm.

AB = 7 cm.

BC = 4 cm.

By calculation, deduce whether triangle ABC is a right-angled triangle.

(4 marks)

3

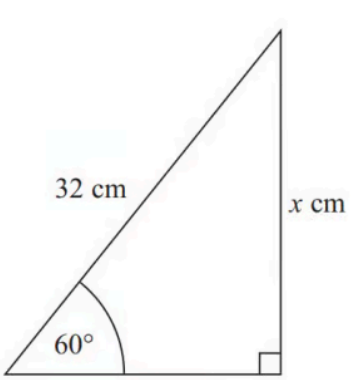


Diagram **NOT** accurately drawn

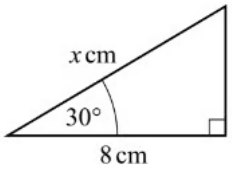
Calculate the value of x.

Give your answer as an exact value.

(3 marks)

Hard Questions

1



NOT TO SCALE

Find the exact value of x.

x = ...

(4 marks)

2 The length of one side of a rectangle is 12cm.

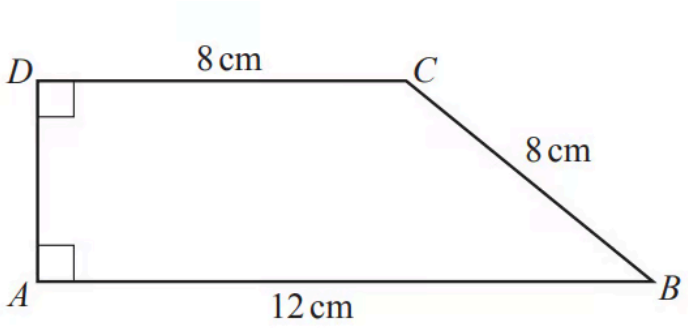
The length of the diagonal of the rectangle is 13cm.

Calculate the area of the rectangle.

..... cm^2

(3 marks)

3 Calculate the area of this trapezium.



NOT TO SCALE

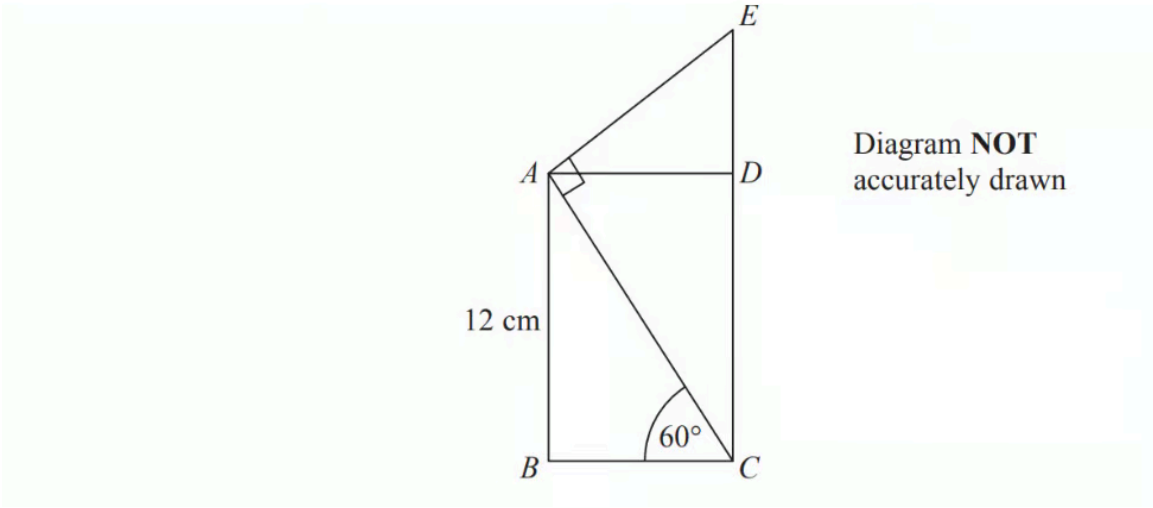
Give your answer as an exact value.

..... cm^2

(4 marks)

Very Hard Questions

1



$ABCD$ is a rectangle.

CDE is a straight line.

AB = 12 cm

Angle ACB= 60°

Angle EAC = 90°

Calculate the length of CE.

You must show all your working.

(4 marks)

2 The table shows some values of x and y that satisfy the equation $y = a\cos x° + b$

x	0	30	60	90	120	150	180
y	3	$1+\sqrt{3}$	2	1	0	$1-\sqrt{3}$	-1

Find the value of y when $x = 45$

(4 marks)

3 Simplify $\dfrac{2\sin 45° - \tan 45°}{4\tan 60°}$

Give your answer in the form $\dfrac{\sqrt{a}-\sqrt{b}}{c}$ where a, b and c are integers.

(4 marks)

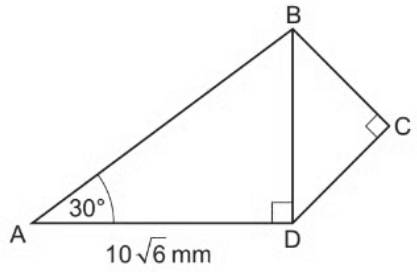
4 ADB and BCD are right-angled triangles.

BC = CD.

$AD = 10\sqrt{6}$ mm

Angle BAD = 30°.

$$\tan 30° = \frac{1}{\sqrt{3}}$$



Not to scale

Work out the length of BC.

.....mm

(6 marks)