EXAM PAPERS PRACTICE

GCSE OCR Math J560

Equation and Problem Solving

Question Paper

"We will help you to achieve A Star "

Question 1

Kalinda buys x packs of currant buns and y boxes of iced buns.

There are 6 currant buns in a pack of currant buns.
There are 8 iced buns in a box of iced buns.

Kalinda buys a total of T buns.
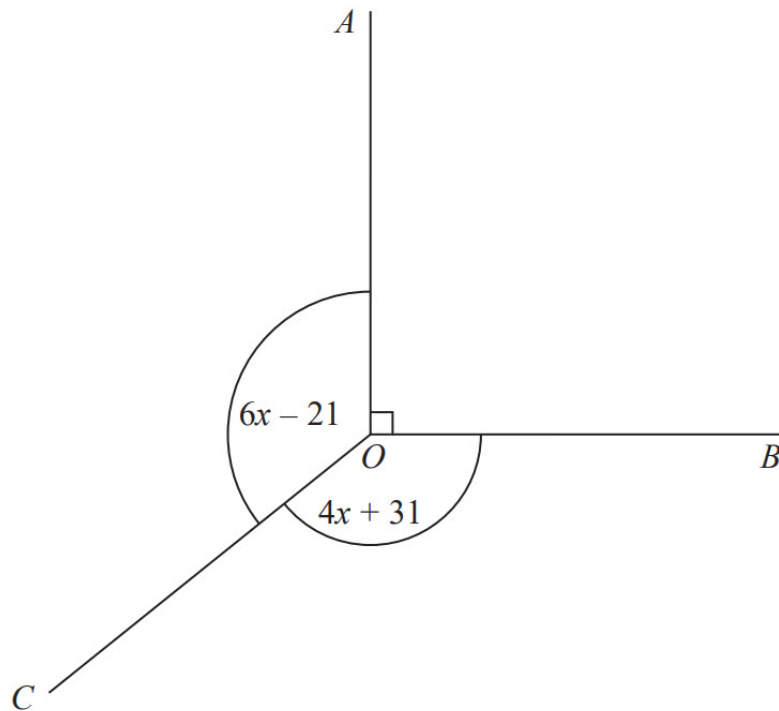Write down a formula for T in terms of x and y.

[3 marks]

Question 2

A

Diagram **NOT**
accurately drawn

$6x - 21$

O B

$4x + 31$

C

In the diagram, all angles are in degrees.

Angle AOB is a right angle.
Angle AOC = Angle BOC.

Work out the value of x.

[3 marks]

Question 3

Gemma has the same number of sweets as Betty.

Gemma gives 24 of her sweets to Betty.
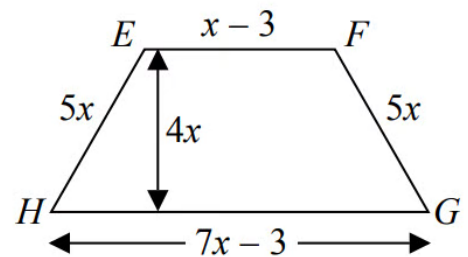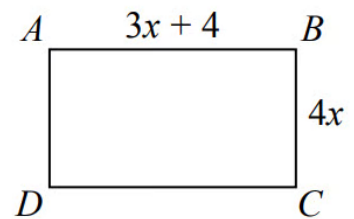Betty now has 5 times as many sweets as Gemma.

Work out the total number of sweets that Gemma and Betty have.

[4 marks]

Question 4

$ABCD$ is a rectangle.
$EFGH$ is a trapezium.

All measurements are in centimetres.
The perimeters of these two shapes are the same.

Work out the area of the rectangle.

[5 marks]

Question 5
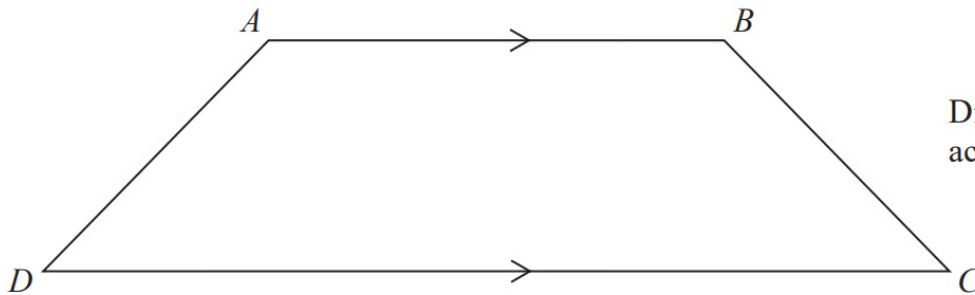
The diagram shows a trapezium.

Diagram **NOT** accurately drawn

$AD = x$ cm.
BC is the same length as AD.
AB is twice the length of AD.
DC is 4 cm longer than AB.

The perimeter of the trapezium is 38 cm.

Work out the length of AD.

[4 marks]

Question 6

A shop sells packets of envelopes.

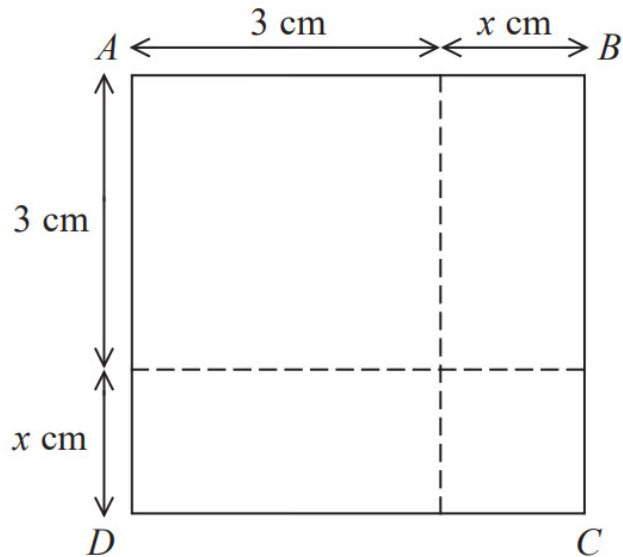There are 5 envelopes in a small packet.
There are 20 envelopes in a large packet.

There is a total of T envelopes in x small packets and y large packets.

Write down a formula for T in terms of x and y.

[3 marks]

Question 7

The area of square $ABCD$ is 10 cm^2.

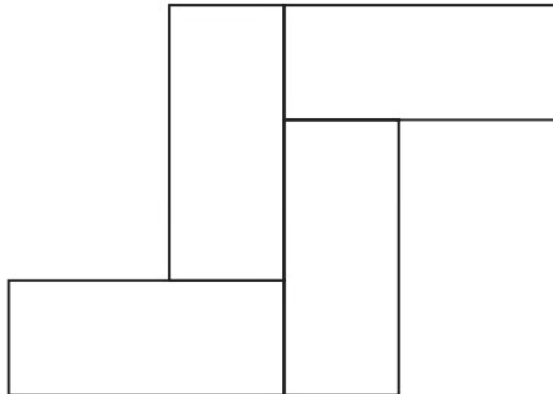Show that $x^2 + 6x = 1$

[3 marks]

Question 8

Here is a rectangle.

The length of the rectangle is 7 cm longer than the width of the rectangle.

4 of these rectangles are used to make this 8-sided shape.
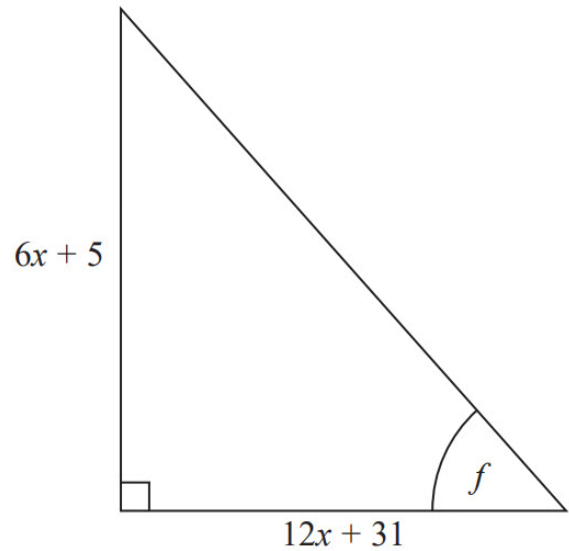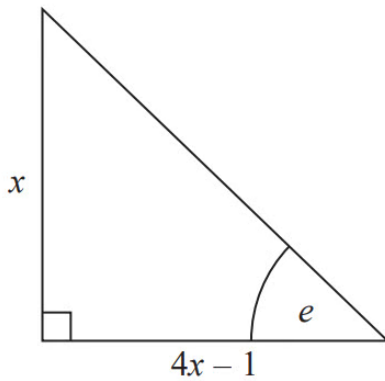
The perimeter of the 8-sided shape is 70 cm.

Work out the area of the 8-sided shape.

[5 marks]

Question 9

Here are two right-angled triangles.

Given that
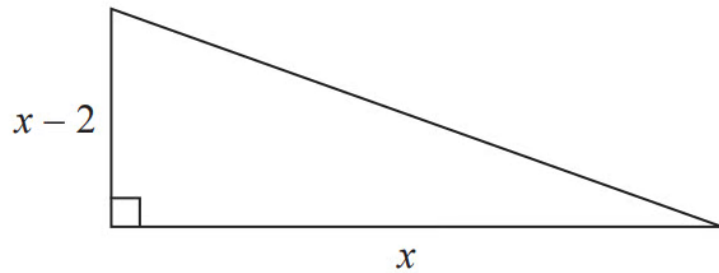
$$\tan e = \tan f$$

find the value of x.

You must show all your working.

[5 marks]

Question 10

Here is a right-angled triangle.

All measurements are in centimetres.
The area of the triangle is 2.5 cm².

Find the perimeter of the triangle.
Give your answer correct to 3 significant figures.
You must show all of your working.

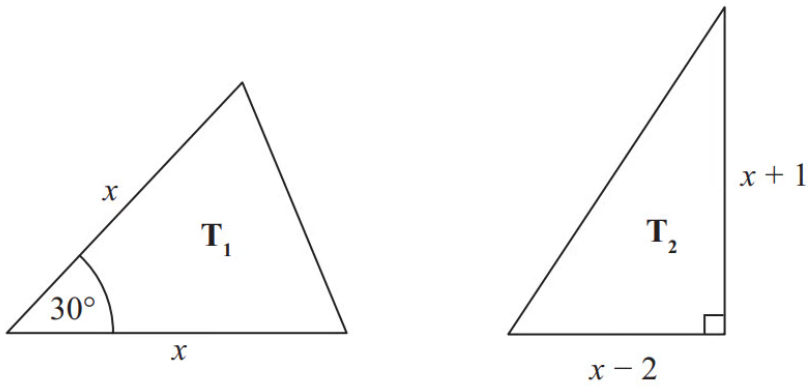**[6 marks]**

Question 11

Diagram **NOT** accurately drawn

The lengths of the sides are in centimetres.

The area of triangle T_1 is equal to the area of triangle T_2.

Work out the value of x, giving your answer in the form $a + \sqrt{b}$ where a and b are integers.

[5 marks]

Question 12

Julie and Liam write down the same number.

Julie multiplies the number by 5 and then adds 4 to the result.
She writes down her answer.

Liam subtracts the number from 10
He writes down his answer.

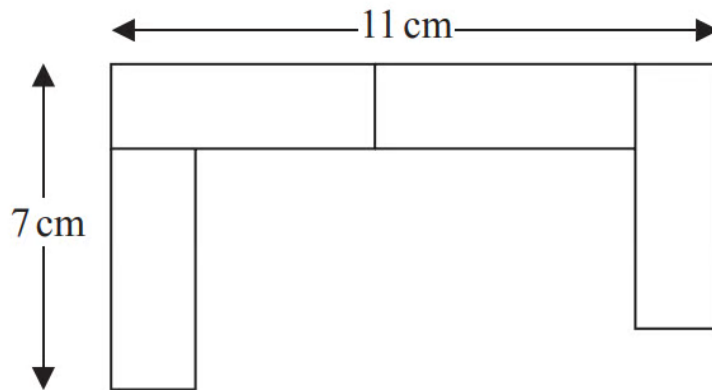Julie's answer is two thirds of Liam's answer.

Work out the number that Julie and Liam started with.
You must show your working.

[5 marks]

Question 13

A pattern is made using identical rectangular tiles.

Find the total area of the pattern.

[4 marks]

Question 14

Becky has some marbles.
Chris has two times as many marbles as Becky.
Dan has seven more marbles than Chris.

They have a total of 57 marbles.

Dan says,
"If I give some marbles to Becky, each of us will have the same number of marbles."

Is Dan correct?
You must show how you get your answer.

[3 marks]