

Name: _____

Forming Equations

Date:

Time:

Total marks available:

Total marks achieved: _____

Questions

Q1.

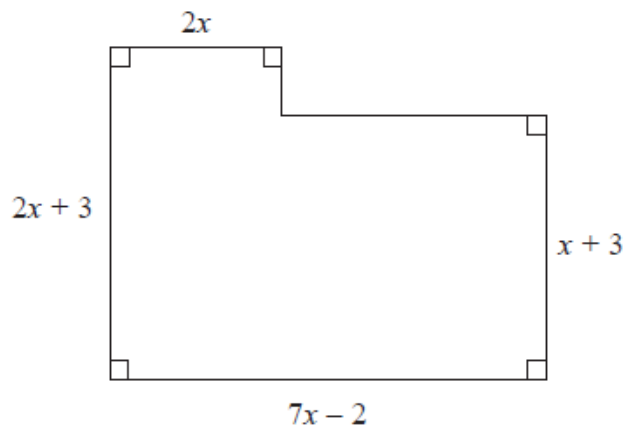


Diagram NOT
accurately drawn

All the measurements in the diagram are in centimetres.

The area of the shape is $A \text{ cm}^2$.

Find a formula for A in terms of x .

You must write your formula as simply as possible.

.....

(Total for question = 4 marks)

Q2.

Dan, Harry and Regan sell cars.

Dan sells x cars.

Harry sells 5 more cars than Dan.

Regan sells twice as many cars as Dan.

Write an expression, in terms of x , for the mean number of cars Dan, Harry and Regan sell.

.....

(Total for question = 2 marks)

Q3.

The diagram shows shape **A**.

All the measurements are in centimetres.

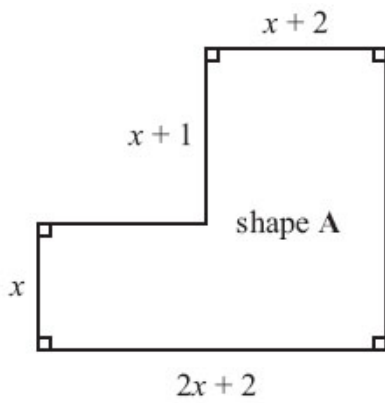


Diagram **NOT** accurately drawn

(a) Find an expression in terms of x for the area, in cm^2 , of shape **A**.
You must simplify your answer.

.....
(4)

Shape **B** is a rectangle.
Shape **B** has the same area as shape **A**.
Shape **B** has a length of $(3x + 2)$ centimetres.

(b) Find an expression in terms of x for the width, in centimetres, of shape **B**.

.....
(1)

(Total for Question is 5 marks)

Q4.

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.

.....

(Total for question = 4 marks)

Q5.

The diagram shows a trapezium.

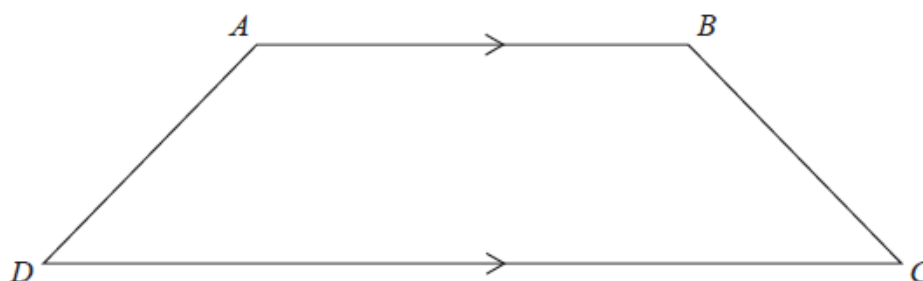


Diagram **NOT** accurately drawn

$AD = x$ 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 .

.....cm

(Total for Question is 4 marks)

Q6.

ABC is a triangle.

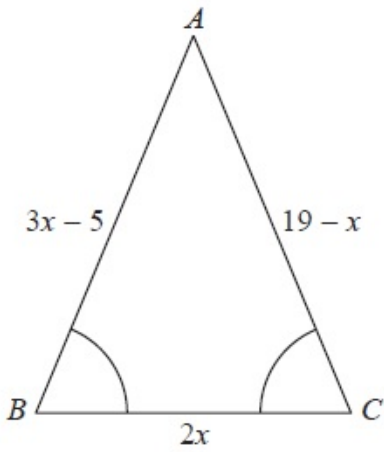


Diagram NOT accurately drawn

Angle $ABC = \text{angle } BCA$.

The length of side AB is $(3x - 5)$ cm.

The length of side AC is $(19 - x)$ cm.

The length of side BC is $2x$ cm.

Work out the perimeter of the triangle.

Give your answer as a number of centimetres.

..... cm

(Total for Question is 5 marks)

Q7.

Stephanie is x years old.

Tobi is twice as old as Stephanie.

Ulrika is 3 years younger than Tobi.

The sum of all their ages is 52 years.

(a) Show that $5x - 3 = 52$

(3)

(b) Work out the value of x .

$x = \dots\dots\dots$

(2)

(Total for Question is 5 marks)

Q8.

Asha and Lucy are selling pencils in a school shop.
They sell boxes of pencils and single pencils.

Asha sells 7 boxes of pencils and 22 single pencils.
Lucy sells 5 boxes of pencils and 2 single pencils.
Asha sells twice as many pencils as Lucy.

Work out how many pencils there are in a box.

.....

(Total for question = 4 marks)

Q9.

Dan has some marbles.
Ellie has twice as many marbles as Dan.
Frank has 15 marbles.

Dan, Ellie and Frank have a total of 63 marbles.

How many marbles does Dan have?

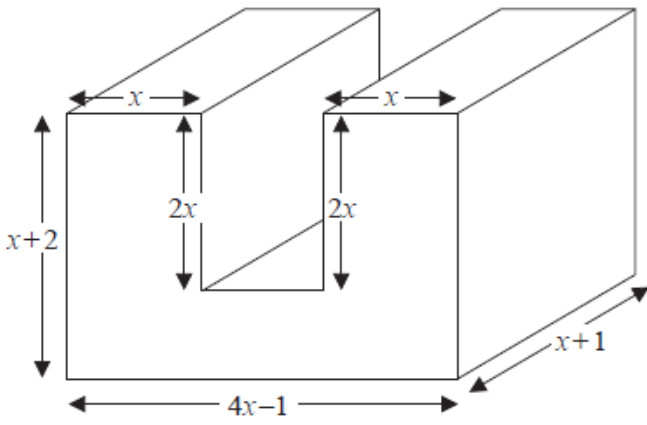
.....

(Total for Question is 3 marks)

Q10.

The diagram shows a prism.

Diagram NOT
accurately drawn



All measurements are in centimetres.
All corners are right angles.

Find an expression, in terms of x , for the volume, in cm^3 , of the prism.
You must show your working.
Give your answer in its simplest form.

.....

(Total for question = 4 marks)