Questions

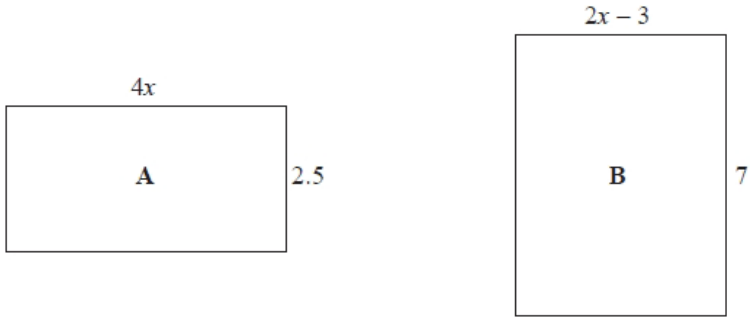
Q1.
The length of a line is x centimetres.

Write down an expression, in terms of x, for the length of the line in millimetres.

.....

(Total for question = 1 mark)

Q2.
Here are two rectangles.



All measurements are in centimetres.

The area of rectangle **A** is equal to the area of rectangle **B**.

Work out the perimeter of rectangle **B**.

..... cm

(Total for question = 5 marks)

Q3.
Dimitar has 20 sweets.
Pip also has 20 sweets.

Dimitar gives Pip x sweets.

Dimitar then eats 5 of his sweets.
Pip then eats half of her sweets.

Write expressions for the number of sweets Dimitar and Pip now have.

Dimitar ..... Pip .....

(Total for question = 3 marks)

Q4.
Julie is x years old.
Kevin is $x + 3$ years old.
Omar is $2x$ years old.

Write an expression, in terms of x, for the mean of their ages.

.....

(Total for Question is 2 marks)

Q5.

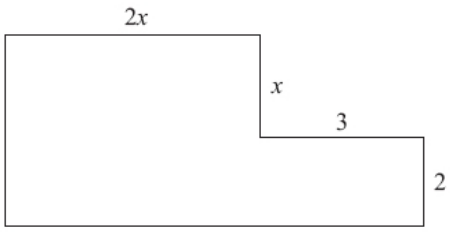


Diagram **NOT** accurately drawn

In the diagram, all measurements are given in centimetres.
All angles are right angles.

Show that the perimeter of the shape can be written as $2(3x + 5)$.

(Total for Question is 4 marks)

Q6.
The diagram shows **shape A**.
All the measurements are in centimetres.

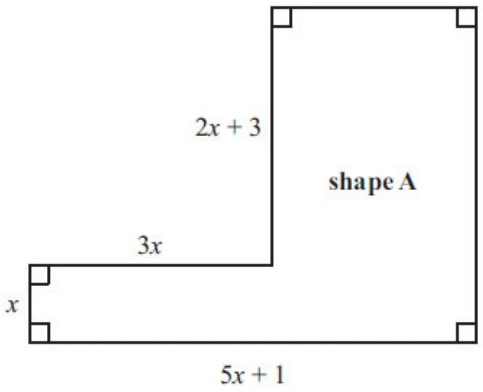


Diagram **NOT** accurately drawn

(a) Find an expression, in terms of x, for the perimeter of **shape A**.

. . . . . .

(3)

A square has the same perimeter as **shape A**.

(b) Find an expression, in terms of x, for the length of one side of this square.

. . . . . .

(1)

(Total for Question is 4 marks)

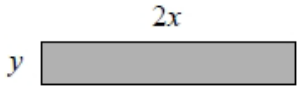
Q7.
Katie has x pets. Agatha has twice as many pets as Katie. Isabel has 3 more pets than Katie.

Write an expression, in terms of x, for the total number of pets that Katie, Agatha and Isabel have.

.....

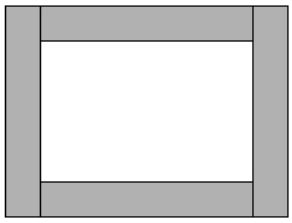
(Total for Question is 2 marks)

Q8.
Here is a rectangle made of card.



The measurements in the diagram are in centimetres.

Lily fits four of these rectangles together to make a frame.



The perimeter of the inside of the frame is P cm.

(a) Show that $P = 8x - 4y$

(2)

Magda says,

"When x and y are whole numbers, P is always a multiple of 4."

(b) Is Magda correct?
You must give a reason for your answer.

.....

..... **(2)**

(Total for question = 4 marks)

Q9.
Stephanie thinks of a positive number. She squares the number and adds 7. The result is 43.
What number did Stephanie think of?

.....

(Total for question = 3 marks)

Q10.

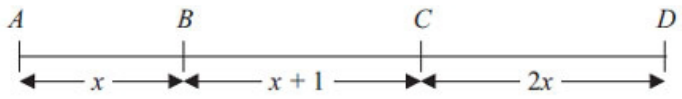


Diagram **NOT** accurately drawn

In the diagram,

$AB = x$ cm
$BC = (x + 1)$ cm
$CD = 2x$ cm

$AD = 19$ cm

(a) Show that $4x + 1 = 19$

(2)

(b) Solve $4x + 1 = 19$

$x =$ . . . . . .

(2)

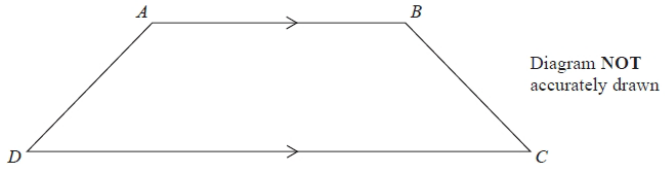
(c) Work out the length of *BD*.

BD = ...cm

(2)

(Total for Question is 6 marks)

Q11.
The diagram shows a trapezium.



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)

Q12.
Redlands School sent *x* students to a revision day. St Samuel's School sent twice as many students as Redlands School. Francis Long School sent 7 fewer students than Redlands School.

Each student paid £15 for the revision day. The students paid a total of £1155

Work out how many students were sent by each school to the revision day.
You must show all your working.

(Total for question = 5 marks)

Q13.
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.
You must show all your working.

.....

(Total for question = 4 marks)