

Forming and Solving Equations Past Paper Questions



Q1.

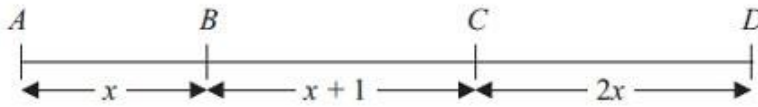


Diagram NOT
accurately drawn

In the diagram,

$$AB = x \text{ cm}$$

$$BC = (x + 1) \text{ cm}$$

$$CD = 2x \text{ cm}$$

$$AD = 19 \text{ cm}$$

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

(2)

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

$$x = \dots\dots\dots$$

(2)

(c) Work out the length of BD .

$$BD = \dots\dots\dots \text{cm}$$

(2)

(Total for Question is 6 marks)

Q2.

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)



Q3.

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)

Q4.

Brian is x years old.

Peter is 4 years older than Brian.

Amy is 2 years younger than Brian.

The total of their ages is 26 years.

Work out the value of x .

.....

(Total for Question is 4 marks)

Q5.

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)



Q6.

Ali has x cards.

Belinda has twice as many cards as Ali.

Charlie has 5 more cards than Ali.

They have a total of 33 cards.

(a) Show that $4x + 5 = 33$

(3)

(b) Work out the number of cards Ali has.

.....
(2)

(Total for Question is 5 marks)

Q7.

Kumar has three boxes of counters A , B and C .

There are x counters in box A .

There are $(2x + 7)$ counters in box B .

There are $(3x - 4)$ counters in box C .

There is a total of 75 counters in the three boxes.

Work out the number of counters in box B .

.....

Q8.

The diagram shows a trapezium.

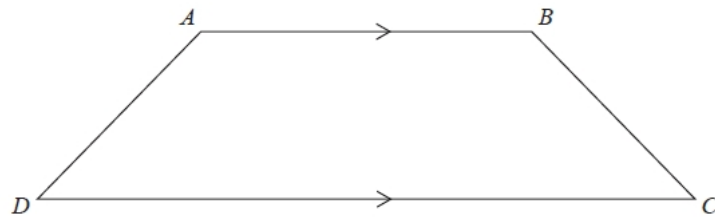


Diagram **NOT** accurately drawn

$AD = x$ 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 .

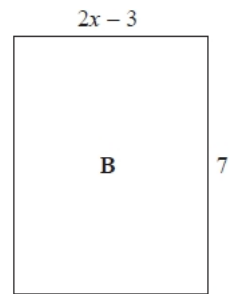
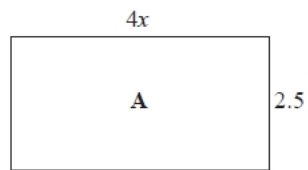
.....cm

(Total for Question is 4 marks)



Q9.

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)



Q10.

ABC is a triangle.

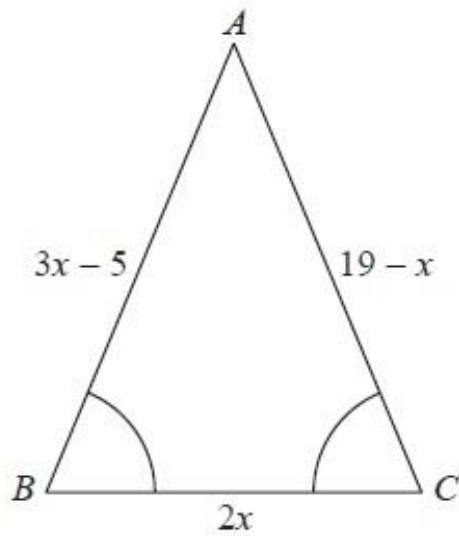


Diagram **NOT**
accurately drawn

Angle $ABC =$ 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)



Q11.

* 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)