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11 (a) Write down the integer values of x that satisfy the inequality $-2 < x \leq 4$

.....
(2)

The region **R**, shown shaded in the diagram, is bounded by three straight lines.

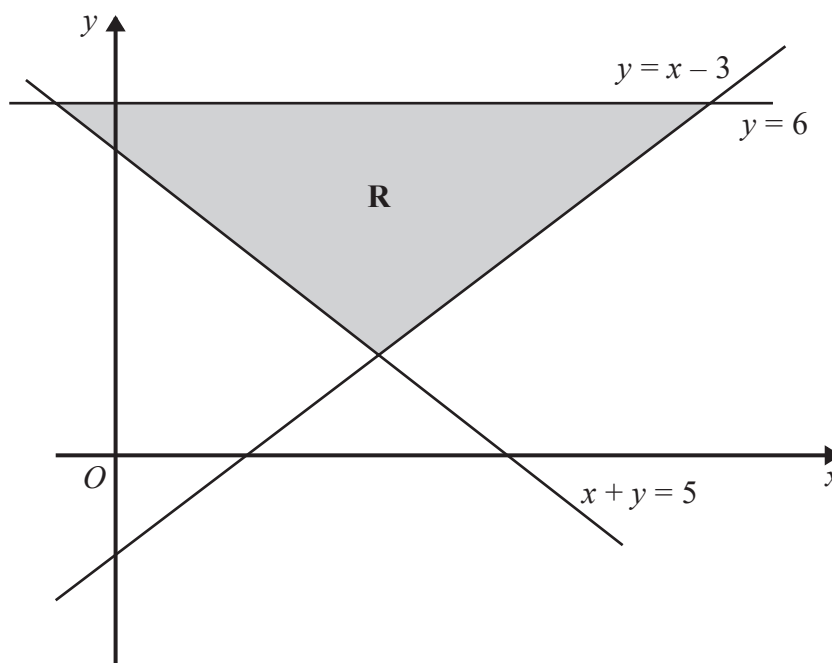


Diagram **NOT** accurately drawn

(b) Write down the three inequalities that define the region **R**.

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

(Total for Question 11 is 4 marks)



- 12 The diagram shows two congruent isosceles triangles and parts of two congruent regular polygons, **X** and **Y**.

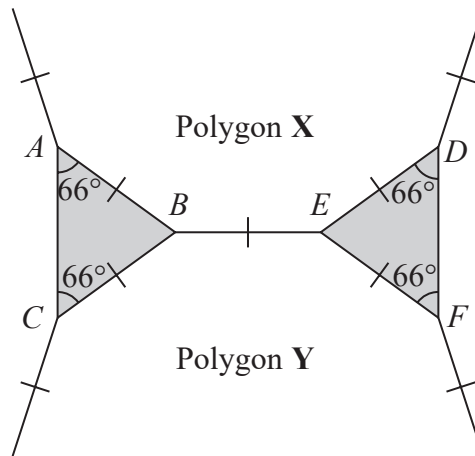


Diagram **NOT** accurately drawn

The two regular polygons each have n sides.

Work out the value of n .

$n = \dots\dots\dots$

(Total for Question 12 is 3 marks)

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13

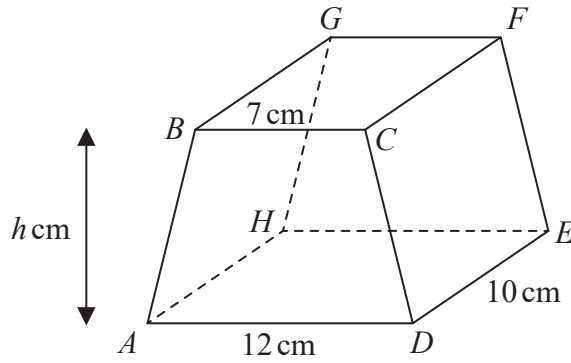


Diagram NOT accurately drawn

The diagram shows a prism $ABCDEFGH$ in which $ABCD$ is a trapezium with BC parallel to AD and $CDEF$ is a rectangle.

$$BC = 7 \text{ cm} \quad AD = 12 \text{ cm} \quad DE = 10 \text{ cm}$$

The height of trapezium $ABCD$ is h cm
The volume of the prism is 608 cm^3

Work out the value of h .

$$h = \dots\dots\dots$$

(Total for Question 13 is 3 marks)

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14 Max kept a record of the marks he scored in each of the 11 spelling tests he took one term.

Here are his marks.

18 5 7 12 11 18 15 16 17 13 14

Find the interquartile range of the marks.

.....
(Total for Question 14 is 3 marks)

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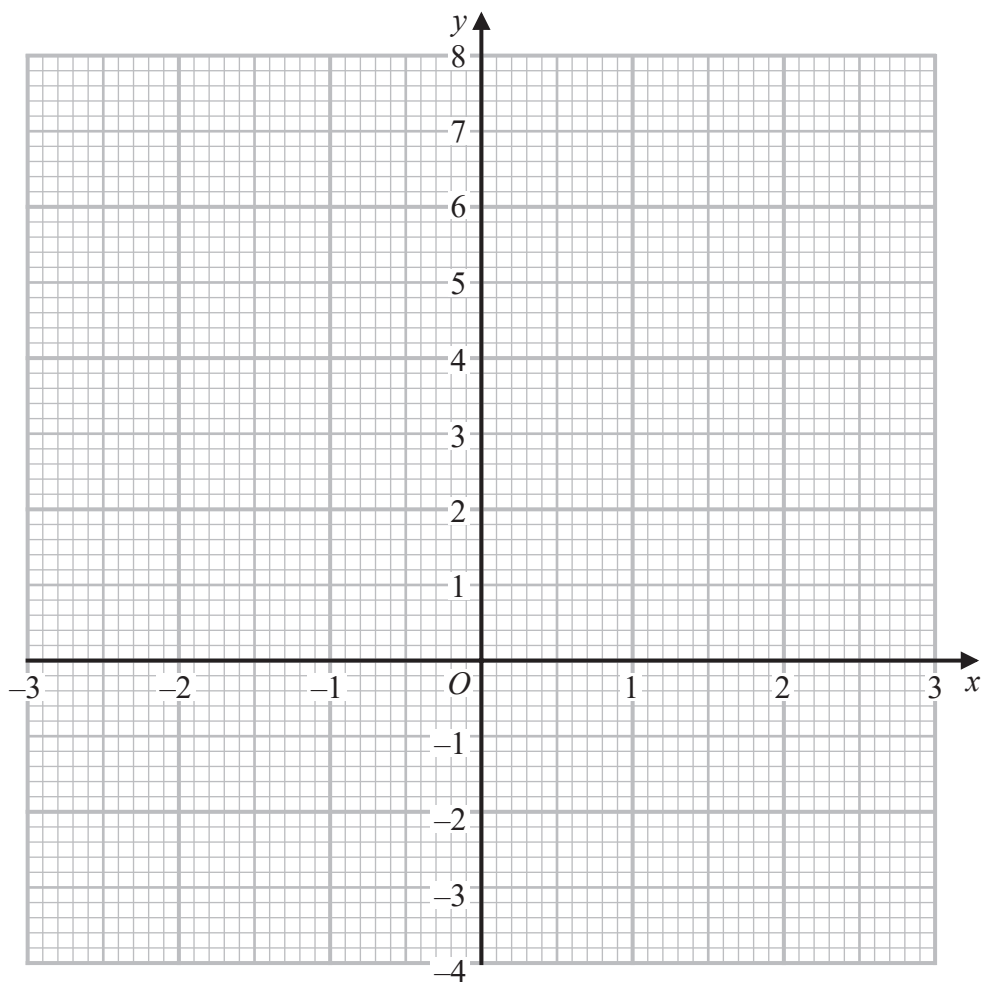
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15 (a) Complete the table of values for $y = x^2 - \frac{x}{2} - 3$

x	-3	-2	-1	0	1	2	3
y	7.5				-2.5		4.5

(2)

(b) On the grid, draw the graph of $y = x^2 - \frac{x}{2} - 3$ for values of x from -3 to 3



(2)

(Total for Question 15 is 4 marks)



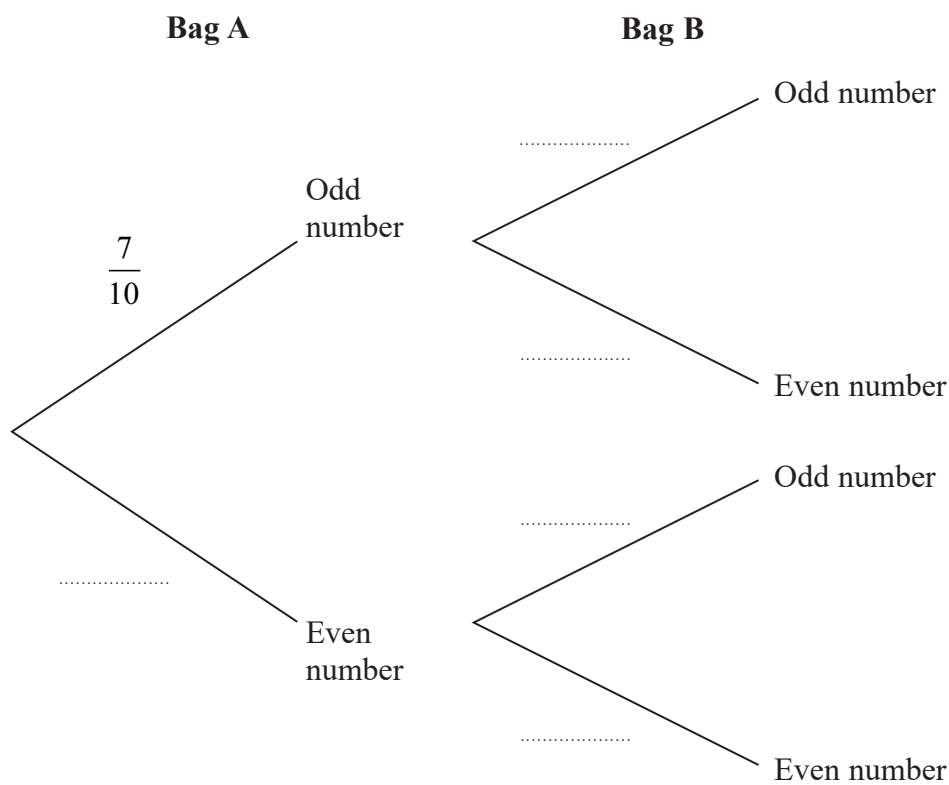
16 Cody has two bags of counters, bag A and bag B.

Each of the counters has either an odd number or an even number written on it.

There are 10 counters in bag A and 7 of these counters have an **odd** number written on them.
There are 12 counters in bag B and 7 of these counters have an **odd** number written on them.

Cody is going to take at random a counter from bag A and a counter from bag B.

(a) Complete the probability tree diagram.



(2)



- (b) Calculate the probability that the total of the numbers on the two counters will be an odd number.

.....
(3)

Harriet also has a bag of counters.

Each of her counters also has either an odd number or an even number written on it.

Harriet is going to take at random a counter from her bag of counters.

The probability that the number on each of Cody's two counters **and** the number on

Harriet's counter will all be even is $\frac{3}{100}$

- (c) Find the least number of counters that Harriet has in her bag.
Show your working clearly.

.....
(3)

(Total for Question 16 is 8 marks)



17 Some students in a school were asked the following question.

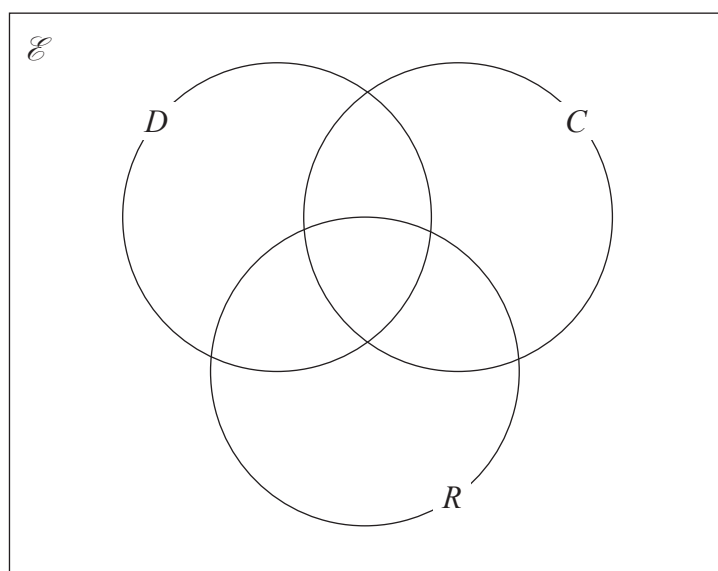
“Do you have a dog (D), a cat (C) or a rabbit (R)?”

Of these students

- 28 have a dog
- 18 have a cat
- 20 have a rabbit
- 8 have both a cat and a rabbit
- 9 have both a dog and a rabbit
- x have both a dog and a cat
- 6 have a dog, a cat and a rabbit
- 5 have not got a dog or a cat or a rabbit

(a) Using this information, complete the Venn diagram to show the number of students in each appropriate subset.

Give the numbers in terms of x where necessary.



(3)

Given that a total of 50 students answered the question,

(b) work out the value of x .

$x = \dots\dots\dots$

(2)

