

SECTION 1: MULTIPLE CHOICE

Each question in this section is worth two marks.

Circle the correct answer.

1. The $+$, $-$, $\times$, $\div$ signs have been left out of the following sum:

$$6 \quad 3 \quad 10 \quad 2 \quad = \quad 23$$

Which of the following expressions has the correct signs?

- a. $6 + 3 \times 10 - 2$ b. $6 \div 3 + 10 \times 2$ c. $6 \times 3 + 10 \div 2$ d. $6 - 3 + 10 \div 2$
2. Which number is one hundred times smaller than 4250?
- a. 425000 b. 4.25 c. 425 d. 42.5
3. Which measurement is the same as 3.5m?
- a. 350cm b. 0.35km c. 350000mm d. 3500cm
4. Which of the following numbers is the smallest?
- a. 0.8 b. $1 \div 2$ c. $\frac{5}{6}$ d. $\frac{3}{12}$
5. If $P = 4$, $Q = 2$ and $R = 5$, what is the value of $R(2P + Q)$?
- a. 15 b. 40 c. 50 d. 60

6. What is the missing number from the following equation?

$$3 \times \left(16 - \square \right) = 36$$

- a. 2 b. 4 c. 6 d. 10

7. What is one third of two minutes?

- a. 20 seconds b. 40 seconds c. 60 seconds d. 80 seconds

8. How much change from a £5 note would you get if you bought three star fruit costing 90p each and two kiwi fruit costing 61p each?

- a. £1.02 b. 98p c. £2.08 d. £1.08

9. To cook a Christmas Pudding you must heat it in the oven for 30 minutes and then cook it for a further 20 minutes per 100g it weighs. For how long must Gerard cook his Christmas Pudding weighing 700g.

- a. 2 hours 50 mins b. 3 hours 20 mins c. 2 hours 10 mins d. 3 hours 10 mins

10. Alfred is three times as old as his son Barrett. Barrett is seven years older than his brother Carl. Carl is eight years old. How old is Alfred.

- a. 18 years old b. 30 years old c. 45 years old d. 60 years old
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SECTION 2: LONG ANSWER

Each question in this section is worth three marks.

Answer in the spaces provided.

11. Write a number in each box to make the calculations correct.

$$35 - \square = 17$$

$$\square \times 6 = 42$$

$$200 \div \square = 40$$

12. Here is a picture of Faisal standing next to his new house in Trumpington.



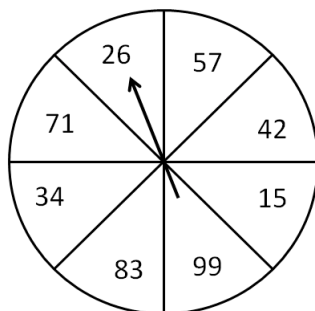
- (a) Estimate the height of Faisal, giving your answer to the nearest metre.

Answer:

- (b) Use this value to estimate the height of Faisal's new house, again giving your answer to the nearest metre.

Answer:

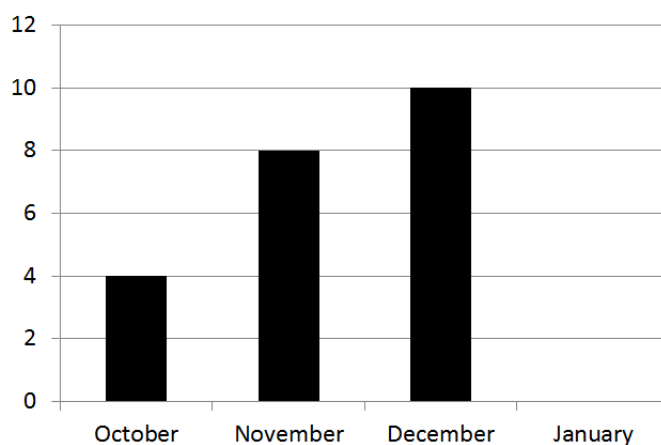
13. A spinner has eight equal sections, as shown below



What is the probability you spin an even number?

Answer:

14. Steve kept a note of how many books he read throughout the winter months. He then made a bar-chart from the data, as shown below.



- (a) How many books did Steve read in November?

Answer:

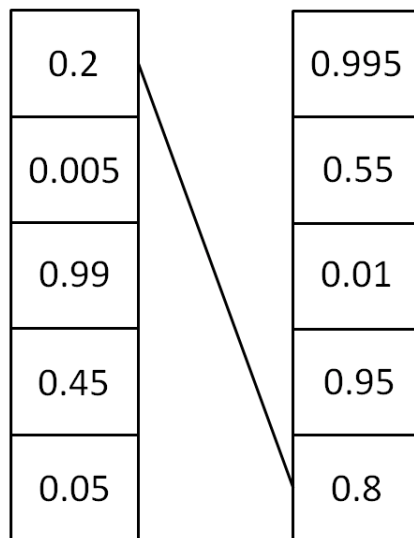
- (b) How many more books did Steve read in December than in October?

Answer:

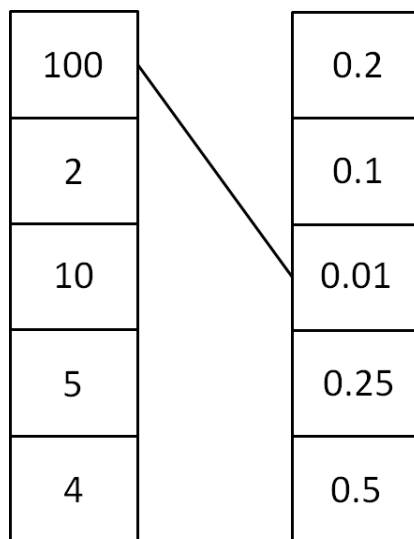
- (c) Steve read five books in January. Draw this on the bar-chart above.

15. (a) In the diagram below join the pairs of numbers that equal 1 when **added** together.

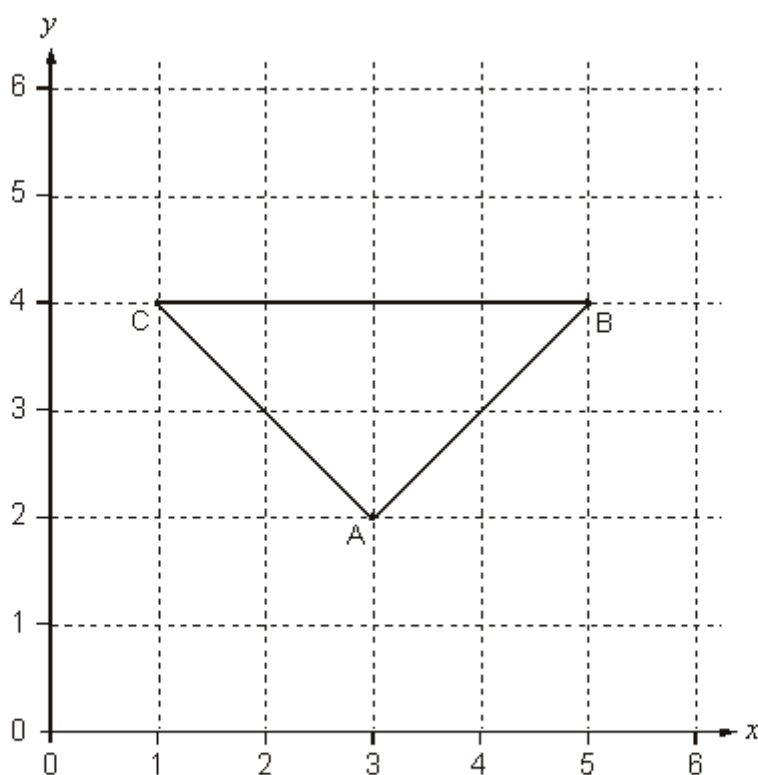
The first one is done for you.



- (b) In the diagram below join the pairs of numbers that equal 1 when **multiplied** together. The first one is done for you.



16. Consider the following triangle ABC, drawn on a square grid.



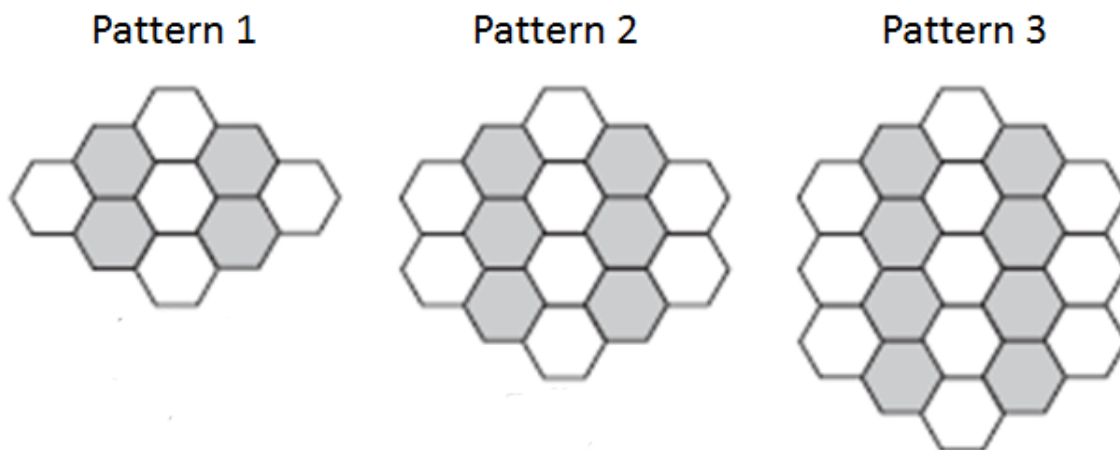
(a) State whether the following statements about ABC are true or false.

- The triangle is isosceles
- The triangle is right-angled
- The triangle has three lines of symmetry
- The coordinates of C are (4,1)

(b) The point M has coordinate (3,6). Draw this on the diagram above. What is the name of the shape ABMC?

Answer:

17. Peter makes a pattern using identically sized hexagons. This pattern is shown below.



- (a) How many hexagons will Peter use to make Pattern 4?
- (b) How many hexagons will Peter use to make Pattern 8?
- (c) What fraction of Pattern 1 is shaded in?

18. Look at the following two equations

$$a + 12 = 16$$

$$2a + b = 18$$

Use both these equations to work out the value of b .

Answer:

19. Complete the table below

x	$x + 1$	$2x$	$4x + 1$
3		6	
	8		
			41

20. The following table shows which sports students chose at The US School in Cambridge.

	<i>Cricket</i>	<i>Football</i>	<i>Basketball</i>	<i>Track and Field</i>
<i>Year 7</i>	6	18	5	14
<i>Year 8</i>	5	16	7	15
<i>Year 9</i>	7	14	10	12
<i>Year 10</i>	2	12	10	19
<i>Year 11</i>	8	13	12	10

(a) How many Year 8 students play Basketball?

(b) What is the difference between the number of students in Year 10 who chose to play Football and who chose Track & Field?

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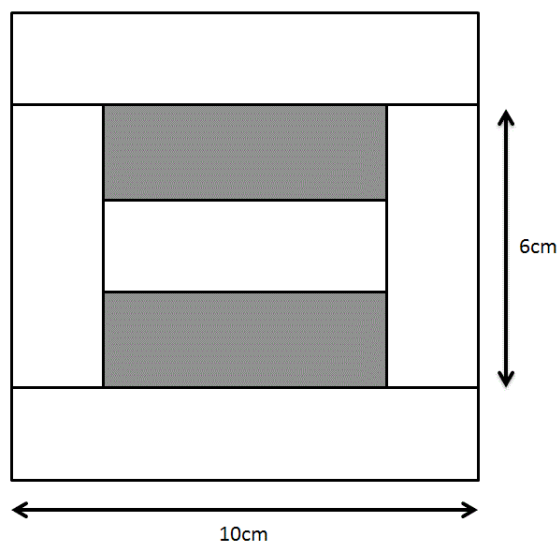
(c) How many students in total chose to play Cricket?

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21. Siobhan thinks of a number and then doubles it. Then she adds 12. The number she ends up with is 34. What was Siobhan's original number?

Answer:

22. Zhengyan has two identical long tiles 10cm in length, and five identical short tiles 6cm in length. He places them together to form a square of edge 10cm. He then colours two short tiles to make the shape of his lucky number. This is shown in the diagram below.



not drawn to scale

Work out the shaded area.

Answer:

SECTION 3: HARDER QUESTION

The question in this section is worth four marks.

Only attempt to answer this if you have finished the rest of the paper.

23. In the table below the totals for the rows and the columns are given. Unfortunately the first column's total is hidden by an inkblot. By calculating the values of A, B, C and D find the missing total.

A	A	A	A	20
B	C	A	C	19
C	C	B	D	25
D	D	B	C	33
	22	26	22	

Answer:

LAST PAGE