Name ..... Class .....

Non-Calculator Crossover Paper 9

GCSE Mathematics · Foundation and Higher

40 marks · 45 minutes · Non-Calculator

1 (a) Write 7.2×10^5 as an ordinary number.

..... **(1)**

(b) Work out $(3 \times 10^4) \times (5 \times 10^6)$

Give your answer in standard form.

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

[Question 1: 3 marks]

2 (a) Write 180 as a product of its prime factors.

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

(b) Find the highest common factor (HCF) of 180 and 126.

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

[Question 2: 4 marks]

3 When Leo planted a sunflower, it was 40 cm tall.
Two weeks later the sunflower is 47 cm tall.
Work out the percentage increase in the height of the sunflower.

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

[Question 3: 2 marks]

4 A theatre sells 236 tickets for a show.
Each ticket costs £18.
It costs the theatre £2900 to put on the show.
Work out how much profit the theatre makes from the show.

£ ..... **(3)**

[Question 4: 3 marks]

5 Olive oil is sold in two sizes of bottle.

Small bottle	Large bottle
750 ml	1.2 litres
£4.50	£6.60

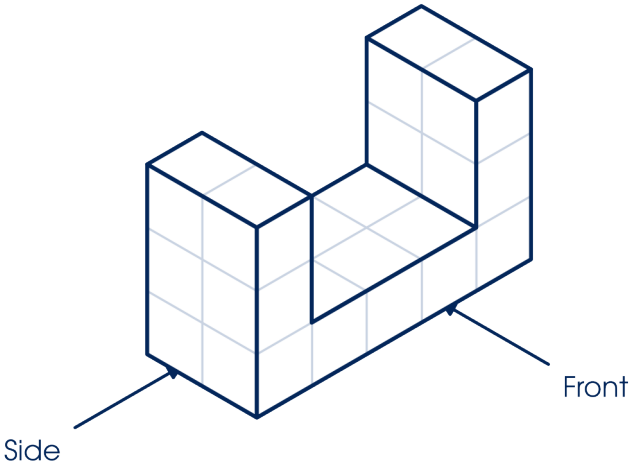
Which bottle is the better value for money?

You must show how you get your answer.

..... **(3)**

[Question 5: 3 marks]

6 The diagram shows a solid prism made from centimetre cubes.



(a) On the centimetre grid, draw the plan of the prism.

(2)

(b) On the centimetre grid, draw the side elevation of the prism from the direction of the arrow marked Side.

(1)

[Question 6: 3 marks]

7 At a cinema, the ratio of the number of adults to the number of children is 2 : 7

(a) What fraction of the people at the cinema are adults?

..... **(1)**

(b) There are 54 people at the cinema.
Then some children leave.
No adults leave and no other people arrive.
The ratio of the number of adults to the number of children is now 1 : 2
How many children leave?

..... **(3)**

[Question 7: 4 marks]

8 Sam records the number of people in each of 20 cars passing his school.

The table shows information about his results.

Number of people	Frequency
1	7
2	6
3	4
4	3

(a) Write down the mode.

..... **(1)**

(b) Work out the mean number of people per car.

..... **(3)**

[Question 8: 4 marks]

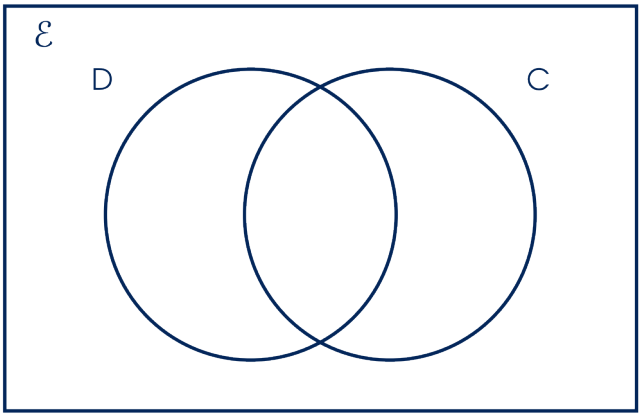
9 There are 48 students in a class.

26 students have a dog.

19 students have a cat.

8 students have both a dog and a cat.

(a) Complete the Venn diagram to show this information.



(2)

(b) One of the 48 students is chosen at random.

Find the probability that this student has a cat but does not have a dog.

..... **(1)**

[Question 9: 3 marks]

10 Make m the subject of the formula $A = 3(m - 2k)$

$m =$ ..... **(2)**

[Question 10: 2 marks]

11 *ABCDE* is a regular pentagon.

ABFG is a square.

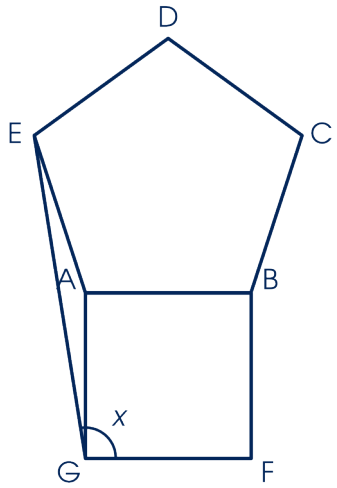


Diagram NOT accurately drawn

Work out the size of the angle marked x.

You must show all your working.

..... ° **(3)**

[Question 11: 3 marks]

12 Solve $x^2 + 5x - 36 = 0$

..... **(3)**

[Question 12: 3 marks]

13 Solve the simultaneous equations

$$4x + 3y = 25$$

$$3x - 2y = 6$$

$x =$ .....

$y =$ ..... **(3)**

[Question 13: 3 marks]

TOTAL FOR PAPER IS 40 MARKS