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

Non-Calculator Crossover Paper 2

GCSE Mathematics · Foundation and Higher

40 marks · 45 minutes · Non-Calculator

1 (a) Write $5^6 \times 5^3$ as a single power of 5

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

(b) Write $\frac{(3^4)^2}{3^5}$ as a single power of 3

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

(c) Work out the value of $2^3 \times 2^4 \div 2^5$

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

[Question 1: 3 marks]

2 Priya has 240 stickers.

She gives $\frac{3}{8}$ of her stickers to her brother.

She then gives $\frac{1}{5}$ of the stickers she has left to her friend.

How many stickers does Priya have now?

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

[Question 2: 3 marks]

3 A shop sells the same cereal in two sizes of box.

Small box	Large box
500 g	750 g
£2.40	£3.45

Which size of box is the better value for money?

You must show how you get your answer.

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

[Question 3: 3 marks]

4 There are three lights on a stage.

Light A flashes every 12 seconds.

Light B flashes every 20 seconds.

Light C flashes every 45 seconds.

All three lights flash at the same time at 7 pm.

At what time will all three lights next flash at the same time?

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

[Question 4: 3 marks]

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5 $a = -3$ $b = 4$

Work out the value of $a^2 - 4ab$

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

[Question 5: 2 marks]

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6 A ferry leaves Portwell at 09:50

It arrives at Skerry Island at 12:05

The ferry travels 144 km.

Work out the average speed of the ferry.

Give your answer in kilometres per hour.

..... km/h **(3)**

[Question 6: 3 marks]

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7 Mr Ahmed asked the 25 students in his class how many pets they have.

The table shows information about their answers.

Number of pets	Frequency
0	6
1	9
2	5
3	3
4	2

Work out the mean number of pets per student.

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

[Question 7: 3 marks]

8 (a) Each exterior angle of a regular polygon is 24°.

Work out the number of sides the polygon has.

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

(b) Ellie says,

"A regular polygon could have interior angles of 130°."

Is Ellie correct?

You must give a reason for your answer.

.....

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

[Question 8: 3 marks]

9 (a) Simplify $(p^3)^4$

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

(b) Simplify fully $\frac{12x^6y^3}{4x^2y}$

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

[Question 9: 3 marks]

10 The diagram shows a triangular prism.

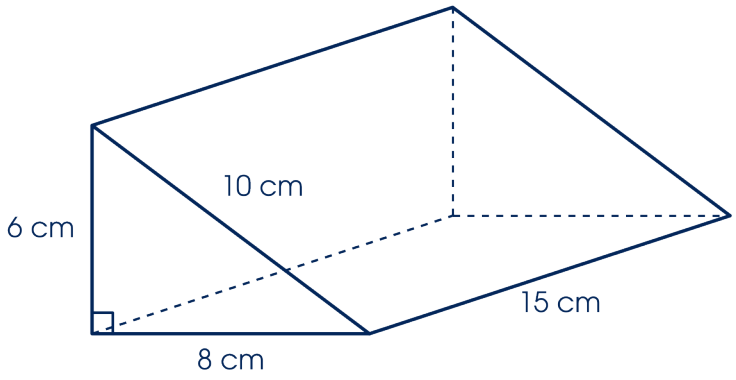


Diagram NOT accurately drawn

The cross-section of the prism is a right-angled triangle.

Work out the volume of the prism.

..... cm^3 **(3)**

[Question 10: 3 marks]

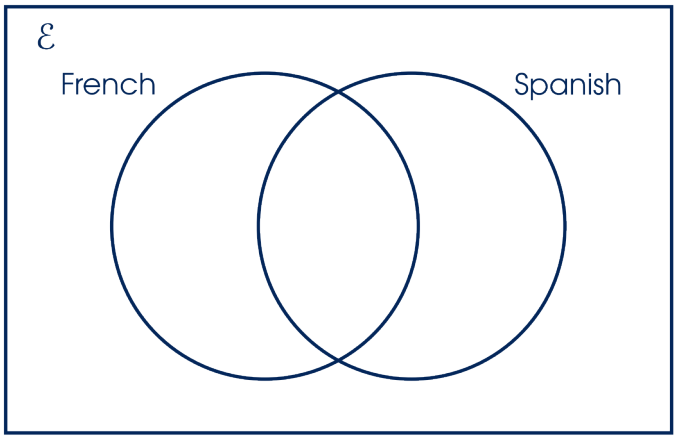
11 50 students were asked if they study French or Spanish.

28 of the students study French.

19 of the students study Spanish.

8 of the students study neither French nor Spanish.

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



(2)

(b) One of the 50 students is chosen at random.

Work out the probability that this student studies exactly one of these languages.

.....

(2)

[Question 11: 4 marks]

12 (a) Solve $4x - 7 > 2x + 5$

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

(b) n is an integer.

List all the values of n such that $-4 < 2n + 2 \leq 8$

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

[Question 12: 4 marks]

13 A straight line passes through the points $(-1, 9)$ and $(3, -3)$.

Find an equation of the line.

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

[Question 13: 3 marks]

TOTAL FOR PAPER IS 40 MARKS