Half paper C8

Paper 3 style · Calculator · Foundation

36 marks
about 35–40 minutes

Name	Date	Score / 36

Answer ALL questions. Write your answers in the spaces provided. You must write down all the stages in your working. You may use a calculator. Diagrams are **NOT** accurately drawn unless it says so.

Help on the longer questions

Underlined words tell you what the question wants.

Remember reminds you of a fact you need.

1 **Write** 0.5% as a fraction.

.....

(1)

(Total for Question 1 is 1 mark)

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2 **Find** $\sqrt{0.81}$

.....

(1)

(Total for Question 2 is 1 mark)

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3 **Work out** $\frac{3}{8}$ of 640

.....

(1)

(Total for Question 3 is 1 mark)

Turn over ►

4 There are men and women at a concert.
There are 42 women.
40% of the people at the concert are men.
Work out the total number of people at the concert.

> **Remember** Fraction of an amount: ÷ by the bottom, × by the top. Percentage: 10% = ÷ 10, 1% = ÷ 100, or use a multiplier (35% = 0.35).

.....

(3)

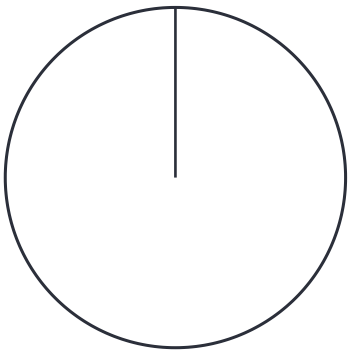
(Total for Question 4 is 3 marks)

5 ✎ **Complete this question on paper (printed at actual size)**

Ali asked each of 72 people to name their favourite fruit.
Here are his results.

Fruit	Frequency
Apples	32
Bananas	18
Grapes	22

Draw an accurate pie chart for his results.



> **Remember** Angle for each = frequency × (360 ÷ total). The angles must add up to 360°.

(3)

(Total for Question 5 is 3 marks)

6 Mia sold

40 cakes at £1.50 each
30 cookies at £1.20 each
some drinks at 75p each

She got a total of £180

Work out how many drinks Mia sold.

> **Remember** Write down each cost or amount as you work it out, then add them up. Write money with 2 decimal places (£4.50). 100p = £1.

.....

(4)

(Total for Question 6 is 4 marks)

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7 Here is a 4-sided spinner.

The table shows the probabilities that when the spinner is spun it will land on 1, on 3 and on 4

Number	1	2	3	4
Probability	0.3		0.25	0.15

The spinner is spun once.

> **Remember** Estimated number = probability × number of trials. The probabilities add up to 1.

(a) **Work out** the probability that the spinner will land on 2

.....

(1)

(b) Which number is the spinner least likely to land on?

.....

(1)

(c) Leo is going to spin the spinner 80 times.
Work out an estimate for the number of times the spinner will land on 1

.....

(2)

(Total for Question 7 is 4 marks)

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8 Amy has 100 cards.
There is a whole number from 1 to 100 on each card.
No cards have the same number.
Amy puts a star on every card that has a multiple of 4 on it.
She puts a circle on every card that has a multiple of 6 on it.
Work out how many cards have both a star and a circle on them.

> **Remember** Use a factor tree. HCF = the primes both numbers share. LCM = the smallest number in both times tables.

.....

(3)

(Total for Question 8 is 3 marks)

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9 **Write down** the ratio of 360 grams to 24 grams.
Give your answer in its simplest form.

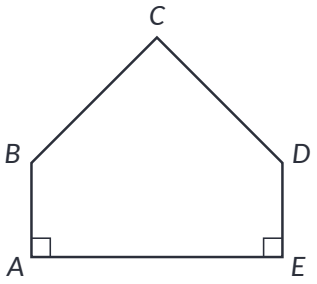
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(2)

(Total for Question 9 is 2 marks)

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10 The diagram shows a pentagon.
The pentagon has one line of symmetry.



$AE = 4x$
$AB = 2x - 1$
$BC = 2x + 2$
All these measurements are given in centimetres.
The perimeter of the pentagon is 38 cm.

> **Remember** Do the same to both sides. Undo + with −, undo × with ÷. Expand brackets first.

(a) **Show that** $12x + 2 = 38$

(3)

(b) **Find** the value of x.

$x =$ .....

(2)

(Total for Question 10 is 5 marks)

11 Ravi buys a car.
The cost of the car is £9500 plus VAT at 20%
Ravi pays a deposit of £2000
He pays the rest of the cost in 12 equal payments.
Work out the amount of each of the 12 payments.

> **Remember** Percentage change = change ÷ original × 100. Multipliers: increase by 5% → × 1.05, decrease by 5% → × 0.95.

£ .....

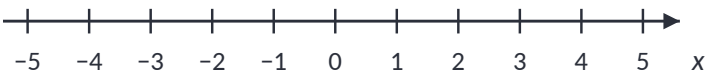
(4)

(Total for Question 11 is 4 marks)

12

Remember Solve like an equation. On a number line: ● means "included" (⩽ or ⩾), ○ means "not included" (< or >).

(a) On the number line, show the inequality $x \geqslant -2$



(2)

(b) **Solve** $5x - 3 < 2x + 9$

.....

(3)

(Total for Question 12 is 5 marks)

TOTAL FOR PAPER IS 36 MARKS

C8 mark scheme

Q		Answer	Mark	Notes
1		$\frac{5}{1000}$ or $\frac{1}{200}$	B1	
2		0.9	B1	
3		240	B1	
4		70	M1 M1 A1	M1 for 60% = 42 M1 for 42 ÷ 60 × 100 A1 cao
5		Apples 160°, Bananas 90°, Grapes 110°, labelled	M1 A1 B1	M1 for 360 ÷ 72 (= 5) A1 for correct angles B1 for a correct labelled pie chart
6		112	M1 M1 M1 A1	M1 for 40 × 1.50 (= 60) or 30 × 1.20 (= 36) M1 for 180 − 60 − 36 (= 84) M1 for 84 ÷ 0.75 A1 cao
7	(a)	0.3	B1	
	(b)	4	B1	
	(c)	24	M1 A1	M1 for 0.3 × 80 A1 cao
8		8	M1 M1 A1	M1 for identifying multiples of 12 (LCM) M1 for 12, 24, ..., 96 A1 cao
9		15 : 1	M1 A1	M1 for 360 : 24 or a partly simplified ratio A1 cao
10	(a)	$4x + 2(2x - 1) + 2(2x + 2) = 4x + 4x - 2 + 4x + 4 = 12x + 2$	M1 M1 A1	M1 for adding five sides M1 for expanding A1 for $12x + 2 = 38$ shown
	(b)	3	M1 A1	M1 for $12x = 36$ A1 cao
11		783.33	M1 M1 M1 A1	M1 for 0.2 × 9500 (= 1900) M1 for 9500 + 1900 (= 11 400) M1 for (11 400 − 2000) ÷ 12 A1 for 783.33

Mark scheme continues ►

Q		Answer	Mark	Notes
12	(a)	Filled circle at −2 with an arrow to the right	B2	B2 (B1 for a correct circle or a correct direction)
	(b)	$x < 4$	M1 M1 A1	M1 for $3x - 3 < 9$ M1 for $3x < 12$ A1 cao

B1 = mark for a correct answer · **M1** = method mark · **A1** = accurate answer after M1 · **C1** = reason · **cao** = correct answer only

Score ____ / 36