Half paper C12

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 **Find** $\frac{3}{8}$ of 56

.....

(1)

(Total for Question 1 is 1 mark)

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2 **Write** 0.04 as a fraction.

.....

(1)

(Total for Question 2 is 1 mark)

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3 **Change** 3.5 kilometres into metres.

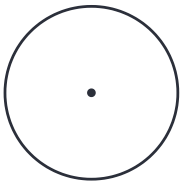
..... metres

(1)

(Total for Question 3 is 1 mark)

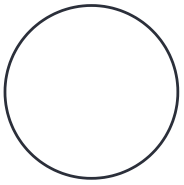
Turn over ►

4 **(a)** On the diagram below, draw a radius of the circle.



(1)

(b) On the diagram below, draw a chord of the circle.



(1)

(Total for Question 4 is 2 marks)

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5 Sam buys 17 bike lights for £4.80 each.
He pays with five £20 notes.

> **Remember** Change = money paid − total cost. Add up all the costs first.

(a) How much change should Sam get?

£ .....

(3)

(b) The normal price of a helmet is £150
In a sale, there is $\frac{1}{5}$ off the normal price of the helmet.
Work out the price of the helmet in the sale.

£ .....

(2)

(Total for Question 5 is 5 marks)

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6 Rice is sold in two sizes of bag.

Size of bag	Weight of rice
small	400 g
large	600 g

Kim buys 4 small bags of rice and some large bags of rice.
In total she buys 6400 g of rice.
Work out the number of large bags of rice Kim buys.

> **Remember** Line up the digits. To divide by a decimal, multiply both numbers by 10 (or 100) first. Check with an estimate.

.....

(3)

(Total for Question 6 is 3 marks)

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7 The stem and leaf diagram below gives information about the ages of people in a book club.

2	3 6 8
3	0 1 4 4 7
4	2 5 5 6 9
5	1 3 8
6	2

Key: 3 | 4 represents 34 years

Find the range of these ages.

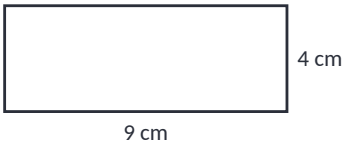
..... years

(2)

(Total for Question 7 is 2 marks)

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8 Here is a rectangle.



Leo has to find the perimeter of this rectangle.
He writes,

Perimeter = 9 × 4

(a) What mistake has Leo made?

(1)

(b) The lengths of the sides of a triangle are x cm, $(x + 5)$ cm and $(x + 3)$ cm.
Ella solves a problem about this triangle to find the value of x.
Her answer is $x = -1$
Explain why Ella's answer must be wrong.

(1)

(Total for Question 8 is 2 marks)

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9 There are 600 students at a school.
Each student has either a school dinner or a packed lunch.

35% of the students have packed lunches.
40% of the students are boys.
70% of the boys have school dinners.

How many girls have packed lunches?
You must show all your working.

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

.....

(4)

(Total for Question 9 is 4 marks)

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10 In a bag there are only red counters, blue counters, green counters and yellow counters.
A counter is taken at random from the bag.
The table shows the probabilities of getting a red counter or a yellow counter.

Colour	red	blue	green	yellow
Probability	0.3	.....	.....	0.15

the number of blue counters : the number of green counters = 2 : 3

Complete the table.

> **Remember** Probabilities add up to 1. P(event) = number of ways it can happen ÷ total number of outcomes. AND means multiply.

(4)

(Total for Question 10 is 4 marks)

11

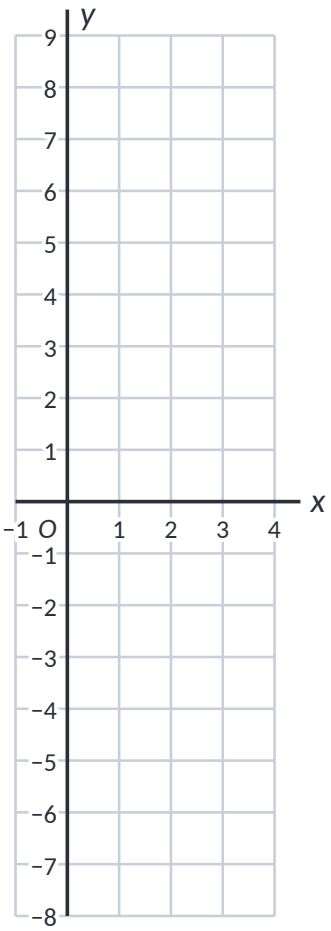
Remember y = mx + c: m is the gradient (up ÷ across), c is where the line crosses the y-axis.

(a) **Complete** the table of values for $y = 3x - 4$

x	−1	0	1	2	3	4
y			−1			8

(2)

(b) On the grid, draw the graph of $y = 3x - 4$ for values of x from −1 to 4



(2)

(Total for Question 11 is 4 marks)

12 **Solve** $5(x - 4) = 35$

$x =$ .....

(2)

(Total for Question 12 is 2 marks)

13 Ravi buys a flat for £185 000
He sells the flat for £203 500
Calculate the percentage profit Ravi makes.

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

..... %

(3)

(Total for Question 13 is 3 marks)

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14 **Factorise fully** $8x^2 + 12x$

.....

(2)

(Total for Question 14 is 2 marks)

TOTAL FOR PAPER IS 36 MARKS

C12 mark scheme

Q		Answer	Mark	Notes
1		21	B1	
2		$\frac{4}{100}$ or $\frac{1}{25}$	B1	
3		3500	B1	
4	(a)	A line from the centre to the circumference	B1	
	(b)	A straight line joining two points on the circle	B1	
5	(a)	18.40	M1 M1 A1	M1 for 17 × 4.80 (= 81.60) M1 for 100 − 81.60 A1 cao
	(b)	120	M1 A1	M1 for $\frac{1}{5}$ × 150 (= 30) A1 cao
6		8	M1 M1 A1	M1 for 4 × 400 (= 1600) M1 for (6400 − 1600) ÷ 600 A1 cao
7		39	M1 A1	M1 for 62 − 23 A1 cao
8	(a)	He found the area; the perimeter is 9 + 4 + 9 + 4 = 26 cm	C1	C1
	(b)	A length cannot be negative, and x is a length	C1	C1
9		138	M1 M1 M1 A1	M1 for 0.35 × 600 (= 210) M1 for 0.4 × 600 (= 240) boys M1 for 0.3 × 240 (= 72) boys with packed lunches A1 for 210 − 72 = 138
10		blue 0.22, green 0.33	M1 M1 A1 A1	M1 for 1 − 0.3 − 0.15 (= 0.55) M1 for 0.55 ÷ 5 (= 0.11) A1 for 0.22 A1 for 0.33

Mark scheme continues ►

Q		Answer	Mark	Notes
11	(a)	−7, −4, 2, 5	B2	B2 all correct (B1 for 2 or 3 correct)
	(b)	Straight line from (−1, −7) to (4, 8)	B2	B2 (B1 for at least 3 points plotted correctly)
12		11	M1 A1	M1 for $5x - 20 = 35$ or $x - 4 = 7$ A1 cao
13		10	M1 M1 A1	M1 for 203 500 − 185 000 (= 18 500) M1 for 18 500 ÷ 185 000 × 100 A1 cao
14		$4x(2x + 3)$	B2	B2 (B1 for a partial factorisation)

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

Score ____ / 36