NON-CALC A · MARK SCHEME

GCSE Mathematics · Foundation Tier

40 marks · 45 minutes · Non-calculator

M method **A** accuracy (depends on M) **B** independent **P** process **C** communication
oe or equivalent cao correct answer only ft follow through Accept any correct, fully justified method.

Question 1

Decimals to percentages · N10 · Number · AO1 · 1 mark

QN	ANSWER	MARK	GUIDANCE
1	**35%**	**B1**	cao

Question 2

Primes and multiples · N4 · Number · AO1 · 2 marks

QN	ANSWER	MARK	GUIDANCE
2(a)	**17**	**B1**	cao
2(b)	**24**	**B1**	cao

Question 3

Probability · P3 · Probability · AO1 · 2 marks

QN	ANSWER	MARK	GUIDANCE
3(a)	$\frac{5}{10}$ **oe**	**B1**	Accept $\frac{1}{2}$, 0.5 or 50%. Do not accept '5 out of 10' or 5 : 10
3(b)	**Cross at 0.3**	**B1**	Cross a little closer to 0 than to $\frac{1}{2}$: between 0.25 and 0.35 on the scale

Question 4

Written multiplication · N2 · Number · AO1 · 2 marks

QN	ANSWER	MARK	GUIDANCE
4	**9264**	**M1**	For a complete method with relative place value correct, condone one arithmetic error, e.g. 386 × 20 = 7720 and 386 × 4 = 1544, or a grid method
		A1	cao

Question 5

Simplify and substitute · A4 · A2 · Algebra · AO1 · 4 marks

QN	ANSWER	MARK	GUIDANCE
5(a)	$3m + 4n$	B2	B1 for $3m$ or $4n$ seen in an expression of two terms
5(b)	14	M1	For 3×6 (= 18) or $(-2)^2 = 4$ seen
		A1	cao. 18 + 4 = 22 scores M1 A0

Question 6

Money problem · N2 · N13 · Number · AO3 · 3 marks

QN	ANSWER	MARK	GUIDANCE
6	No, with £40.25 needed (or 25p short)	P1	For 2×8.50 (= 17) or 3×5.75 (= 17.25)
		P1	For a complete process to find the total, e.g. 17 + 17.25 + 6 (= 40.25), or to subtract all costs from 40
		C1	For 'No' with correct figures, e.g. 40.25 > 40 or he is 25p short

Question 7

Sharing in a ratio · R5 · Ratio & proportion · AO2 · 3 marks

QN	ANSWER	MARK	GUIDANCE
7	14	M1	For $56 \div (3 + 5)$ (= 7)
		M1	For 7×3 (= 21) and 7×5 (= 35), or 7×2
		A1	cao. An answer of 21 and 35 with no subtraction scores M1 M1 A0

Question 8

Mean · S4 · Statistics · AO2 · 3 marks

QN	ANSWER	MARK	GUIDANCE
8(a)	10	M1	For 5 × 8 (= 40) or 3 + 11 + 7 + 9 (= 30)
		A1	cao
8(b)	8	B1	cao. Adding a value equal to the mean leaves the mean unchanged

Question 9

Angle facts · G3 · Geometry & measures · AO2 · 3 marks

QN	ANSWER	MARK	GUIDANCE
9	110°	M1	For (180 – 40) ÷ 2 (= 70) as angle ABC or angle ACB
		A1	cao
		C1	For full reasons, e.g. base angles of an isosceles triangle are equal, angles in a triangle add up to 180°, angles on a straight line add up to 180° (or the exterior angle of a triangle equals the sum of the two interior opposite angles)

Question 10

Solve linear equations · A17 · Algebra · AO1 · 2 marks

QN	ANSWER	MARK	GUIDANCE
10	–5	M1	For a correct first step collecting terms, e.g. $3x + 9 = -6$ or $5x - 2x = -6 - 9$
		A1	cao

Question 11

Adding mixed numbers · N2 · N8 · Number · AO1 · 2 marks

QN	ANSWER	MARK	GUIDANCE
11	$4\frac{1}{12}$	M1	For both fractions written with a common denominator, e.g. $\frac{28}{12} + \frac{21}{12}$ or $\frac{4}{12} + \frac{9}{12}$ with whole numbers dealt with separately
		A1	Accept $4\frac{1}{12}$ only (not $\frac{49}{12}$)

Question 12

Percentages and fractions · R9 · N12 · Ratio & proportion · AO3 · 3 marks

QN	ANSWER	MARK	GUIDANCE
12	**Shop B (£51 compared with £54)**	P1	For $72 \div 4$ (= 18) or $72 \times \frac{3}{4}$ (= 54)
		P1	For 60×0.15 (= 9) or 10% = 6 and 5% = 3, or 60×0.85 (= 51)
		C1	For 'Shop B' supported by 54 and 51, or a difference of £3

Question 13

nth term of a sequence · A25 · Algebra · AO1/2 · 3 marks

QN	ANSWER	MARK	GUIDANCE
13(a)	$4n + 1$	B2	B1 for $4n + k$ where $k \neq 1$
13(b)	**No, with reason**	C1	e.g. every term is odd and 102 is even, or $4n + 1 = 102$ gives $n = 25.25$, which is not a whole number, or 101 and 105 are terms

Question 14

Area problem · G16 · N2 · Geometry & measures · AO3 · 4 marks

QN	ANSWER	MARK	GUIDANCE
14	24.95	P1	For 12 × 8 (= 96) or 3 × 3 (= 9)
		P1	For 96 – 9 (= 87)
		P1	For 87 ÷ 20 (= 4.35) and rounding up to 5 boxes
		A1	cao. 4 boxes (£19.96) scores P1 P1 P0 A0

Question 15

Ratio problem · R5 · R8 · Ratio & proportion · AO3 · 3 marks

QN	ANSWER	MARK	GUIDANCE
15	108	P1	For recognising that 1 part = 12, e.g. 5 – 4 = 1 part
		P1	For 9 × 12 or 48 and 60 seen
		A1	cao

Paper overview

Q	TOPIC	SPEC REF	STRAND	AO	MARKS
1	Decimals to percentages	N10	Number	AO1	1
2	Primes and multiples	N4	Number	AO1	2
3	Probability	P3	Probability	AO1	2
4	Written multiplication	N2	Number	AO1	2
5	Simplify and substitute	A4 · A2	Algebra	AO1	4
6	Money problem	N2 · N13	Number	AO3	3
7	Sharing in a ratio	R5	Ratio & proportion	AO2	3
8	Mean	S4	Statistics	AO2	3
9	Angle facts	G3	Geometry & measures	AO2	3
10	Solve linear equations	A17	Algebra	AO1	2
11	Adding mixed numbers	N2 · N8	Number	AO1	2
12	Percentages and fractions	R9 · N12	Ratio & proportion	AO3	3
13	nth term of a sequence	A25	Algebra	AO1/2	3
14	Area problem	G16 · N2	Geometry & measures	AO3	4
15	Ratio problem	R5 · R8	Ratio & proportion	AO3	3
Total					**40**

Marks by strand

Number	**10 marks (25%)**
Algebra	**9 marks (22%)**
Ratio & proportion	**9 marks (22%)**
Geometry & measures	**7 marks (18%)**
Probability	**2 marks (5%)**
Statistics	**3 marks (8%)**

Marks by assessment objective

AO1	Standard techniques	**17 marks (42%)**
AO2	Reasoning	**10 marks (25%)**
AO3	Problem solving	**13 marks (32%)**