NON-CALC E · 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

Place value · N1 · Number · AO1 · 1 mark

QN	ANSWER	MARK	GUIDANCE
1	**7 hundredths**	**B1**	Accept 0.07 or $\frac{7}{100}$

Question 2

Factors and multiples · N4 · Number · AO1 · 1 mark

QN	ANSWER	MARK	GUIDANCE
2	**4 or 20**	**B1**	Either value

Question 3

Algebraic expressions · A1 · A3 · Algebra · AO1/2 · 2 marks

QN	ANSWER	MARK	GUIDANCE
3(a)	**6*y***	**B1**	cao
3(b)	**15*n* + 40**	**B1**	oe, e.g. 40 + 15*n*

Question 4

Pie charts · S2 · Statistics · AO1 · 3 marks

QN	ANSWER	MARK	GUIDANCE
4	**Correct pie chart**	**M1**	For 360 ÷ 36 (= 10°) or one correct angle: 150°, 120°, 60° or 30°
		A1	For at least two sectors drawn correctly (± 2°)
		A1	For a fully correct pie chart with all sectors labelled

Question 5

Negative numbers · N2 · Number · AO1 · 2 marks

QN	ANSWER	MARK	GUIDANCE
5(a)	**15**	**B1**	cao
5(b)	**–2**	**B1**	cao

Question 6

Map scales · R2 · G15 · Ratio & proportion · AO1 · 2 marks

QN	ANSWER	MARK	GUIDANCE
6	37	M1	For 7.4 × 5
		A1	cao

Question 7

Unit costs and change · R10 · N2 · Ratio & proportion · AO3 · 3 marks

QN	ANSWER	MARK	GUIDANCE
7	6.40	P1	For 7.50 ÷ 5 (= 1.50) or 2.40 ÷ 3 (= 0.80)
		P1	For 20 – (8 × 1.50 + 2 × 0.80), i.e. 20 – (12 + 1.60)
		A1	cao

Question 8

Forming and solving equations · A17 · A21 · Algebra · AO2 · 3 marks

QN	ANSWER	MARK	GUIDANCE
8	9	M1	For forming an equation, e.g. $4n - 7 = 29$
		M1	For $4n = 36$ or $(29 + 7) \div 4$
		A1	cao. Accept a correct non-algebraic method for M0 M1 A1

Question 9

Area of a trapezium · G16 · Geometry & measures · AO1/2 · 3 marks

QN	ANSWER	MARK	GUIDANCE
9(a)	40	M1	For $\frac{1}{2} \times (6 + 10) \times 5$, or splitting into a rectangle and triangles
		A1	cao
9(b)	10	B1	ft their (a) ÷ 4

Question 10

Sample spaces · P6 · P3 · Probability · AO1/2 · 3 marks

QN	ANSWER	MARK	GUIDANCE
10(a)	2 3 4 / 3 4 5	B1	All five missing totals correct
10(b)	$\frac{2}{6}$	B1	oe, e.g. $\frac{1}{3}$; ft their table
10(c)	No, with reason	C1	e.g. a total of 3 can happen in 2 ways but a total of 5 in only 1 way, or P(3) = $\frac{2}{6}$ and P(5) = $\frac{1}{6}$

Question 11

Subtracting fractions · N2 · N8 · Number · AO1 · 2 marks

QN	ANSWER	MARK	GUIDANCE
11	$\frac{7}{12}$	M1	For both fractions written with a common denominator, e.g. $\frac{10}{12} - \frac{3}{12}$
		A1	oe

Question 12

Linear inequalities · A22 · Algebra · AO1 · 3 marks

QN	ANSWER	MARK	GUIDANCE
12(a)	$x < 5$	M1	For $3x < 15$, or 5 as a critical value
		A1	cao
12(b)	4	B1	ft their (a) if an inequality

Question 13

Angles in polygons · G3 · Geometry & measures · AO1/2 · 3 marks

QN	ANSWER	MARK	GUIDANCE
13(a)	9	M1	For 360 ÷ 40
		A1	cao
13(b)	140	B1	cao (180 – 40)

Question 14

Comparing deals · N2 · N13 · Number · AO3 · 3 marks

QN	ANSWER	MARK	GUIDANCE
14	Contract B, by £36	P1	For 24 × 24 (= 576)
		P1	For 180 + 15 × 24 (= 540)
		C1	For 'B' with £36 cheaper, from correct totals

Question 15

Ratio and units · R5 · R1 · Ratio & proportion · AO3 · 3 marks

QN	ANSWER	MARK	GUIDANCE
15	1.80	P1	For 2000 ÷ 8 × 3 (= 750 ml), or 2 litres = 2000 ml used in a ratio method
		P1	For 750 ÷ 250 = 3 cartons
		A1	Accept 180p

Question 16

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

QN	ANSWER	MARK	GUIDANCE
16	13	P1	For 30 × 0.4 (= 12 boys) and 18 girls
		P1	For 12 ÷ 3 (= 4) or 18 ÷ 2 (= 9)
		A1	cao

Paper overview

Q	TOPIC	SPEC REF	STRAND	AO	MARKS
1	Place value	N1	Number	AO1	1
2	Factors and multiples	N4	Number	AO1	1
3	Algebraic expressions	A1 · A3	Algebra	AO1/2	2
4	Pie charts	S2	Statistics	AO1	3
5	Negative numbers	N2	Number	AO1	2
6	Map scales	R2 · G15	Ratio & proportion	AO1	2
7	Unit costs and change	R10 · N2	Ratio & proportion	AO3	3
8	Forming and solving equations	A17 · A21	Algebra	AO2	3
9	Area of a trapezium	G16	Geometry & measures	AO1/2	3
10	Sample spaces	P6 · P3	Probability	AO1/2	3
11	Subtracting fractions	N2 · N8	Number	AO1	2
12	Linear inequalities	A22	Algebra	AO1	3
13	Angles in polygons	G3	Geometry & measures	AO1/2	3
14	Comparing deals	N2 · N13	Number	AO3	3
15	Ratio and units	R5 · R1	Ratio & proportion	AO3	3
16	Percentages and fractions	R9 · N12	Ratio & proportion	AO3	3
Total					**40**

Marks by strand

Number	**9 marks (22%)**
Algebra	**8 marks (20%)**
Ratio & proportion	**11 marks (28%)**
Geometry & measures	**6 marks (15%)**
Probability	**3 marks (8%)**
Statistics	**3 marks (8%)**

Marks by assessment objective

AO1	Standard techniques	**20 marks (50%)**
AO2	Reasoning	**8 marks (20%)**
AO3	Problem solving	**12 marks (30%)**