NON-CALC I · 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

Rounding · N15 · Number · AO1 · 1 mark

QN	ANSWER	MARK	GUIDANCE
1	**3800**	**B1**	cao

Question 2

Negative numbers · N2 · Number · AO1 · 2 marks

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

Question 3

Fibonacci-type sequences · A23 · Algebra · AO1/2 · 2 marks

QN	ANSWER	MARK	GUIDANCE
3(a)	**19, 31**	**B1**	cao
3(b)	**5**	**B1**	From terms a, 3, $a + 3$, $a + 6$ with $a + 6 = 11$

Question 4

Angles and parallel lines · G3 · Geometry & measures · AO1/2 · 2 marks

QN	ANSWER	MARK	GUIDANCE
4(a)	**64**	**B1**	cao
4(b)	**Alternate angles are equal**	**C1**	Must use the word 'alternate'. Do not accept 'Z angles'

Question 5

Mode and median · S4 · Statistics · AO1 · 2 marks

QN	ANSWER	MARK	GUIDANCE
5(a)	31	B1	cao
5(b)	27.5	B1	cao

Question 6

Converting units · R1 · N13 · Ratio & proportion · AO1 · 3 marks

QN	ANSWER	MARK	GUIDANCE
6(a)	3500	B1	cao
6(b)	8	M1	For 2.4 m = 240 cm, or 30 cm = 0.3 m
		A1	cao

Question 7

Calculating with standard form · N9 · Number · AO1 · 2 marks

QN	ANSWER	MARK	GUIDANCE
7	1.2×10^8	M1	For 12×10^7 or 120 000 000
		A1	cao

Question 8

Relative frequency · P5 · P1 · Probability · AO1/2 · 3 marks

QN	ANSWER	MARK	GUIDANCE
8(a)	$\frac{12}{50}$ oe	B1	Accept 0.24 or 24%
8(b)	No, with reason	C1	e.g. 50 rolls is not enough to decide, or 12 is not far from the expected 8 or 9
8(c)	72	B1	ft their (a) × 300

Question 9

Area of a circle · G17 · Geometry & measures · AO1/2 · 3 marks

QN	ANSWER	MARK	GUIDANCE
9(a)	25π	M1	For π × 5^2 or radius = 5 used in πr^2
		A1	cao. 100π scores M0 A0
9(b)	No, with reason	C1	e.g. the area becomes 4 times as big, or radius 10 gives 100π which is 4 × 25π

Question 10

Enlargement · G7 · Geometry & measures · AO1 · 2 marks

QN	ANSWER	MARK	GUIDANCE
10	Triangle at (3, 3), (9, 3), (3, 6)	B2	B1 for a correct-size triangle in the wrong position, or two vertices correct

Question 11

Spot the mistake: equations · A17 · Algebra · AO2 · 3 marks

QN	ANSWER	MARK	GUIDANCE
11(a)	**Explanation**	**C1**	e.g. he only multiplied the x by 4; 4 × 3 should be 12, so the second line should be $4x - 12$
11(b)	**11**	**M1**	For $4x - 12 = 2x + 10$ or $2x = 22$
		A1	cao

Question 12

Exchange rates · R10 · N13 · Ratio & proportion · AO3 · 3 marks

QN	ANSWER	MARK	GUIDANCE
12	**London, with £75 = €90 (or €96 = £80)**	**P1**	For a start to converting, e.g. 75 × 1.2, or 96 ÷ 1.2, or £10 = €12
		P1	For €90 or £80
		C1	For 'London' with correct comparable figures

Question 13

Comparing distributions · S4 · S1 · Statistics · AO2 · 2 marks

QN	ANSWER	MARK	GUIDANCE
13	**Two comparisons in context**	**B1**	For comparing means, e.g. Class P did better on average because their mean is higher
		B1	For comparing ranges, e.g. Class Q's results were more consistent because their range is lower

Question 14

Forming equations from area · A21 · G16 · Algebra · AO3 · 3 marks

QN	ANSWER	MARK	GUIDANCE
14	6	P1	For area of square = 36
		P1	For $4(x + 3) = 36$ or $x + 3 = 9$
		A1	cao

Question 15

Money problem · N2 · N12 · Number · AO3 · 4 marks

QN	ANSWER	MARK	GUIDANCE
15	8	P1	For 7.5 × 4 (= 30 hours) or 12 × 7.5 (= 90)
		P1	For weekly pay of £360
		P1	For 360 ÷ 5 (= 72) and 540 ÷ 72 (= 7.5) or repeated addition of 72
		A1	cao. 7.5 weeks scores P3 A0

Question 16

Speed problem · R11 · Ratio & proportion · AO3 · 3 marks

QN	ANSWER	MARK	GUIDANCE
16	20	P1	For $18 \times \frac{40}{60}$ (= 12 km)
		P1	For total distance ÷ total time, e.g. (12 + 8) ÷ 1
		A1	cao

Paper overview

Q	TOPIC	SPEC REF	STRAND	AO	MARKS
1	Rounding	N15	Number	AO1	1
2	Negative numbers	N2	Number	AO1	2
3	Fibonacci-type sequences	A23	Algebra	AO1/2	2
4	Angles and parallel lines	G3	Geometry & measures	AO1/2	2
5	Mode and median	S4	Statistics	AO1	2
6	Converting units	R1 · N13	Ratio & proportion	AO1	3
7	Calculating with standard form	N9	Number	AO1	2
8	Relative frequency	P5 · P1	Probability	AO1/2	3
9	Area of a circle	G17	Geometry & measures	AO1/2	3
10	Enlargement	G7	Geometry & measures	AO1	2
11	Spot the mistake: equations	A17	Algebra	AO2	3
12	Exchange rates	R10 · N13	Ratio & proportion	AO3	3
13	Comparing distributions	S4 · S1	Statistics	AO2	2
14	Forming equations from area	A21 · G16	Algebra	AO3	3
15	Money problem	N2 · N12	Number	AO3	4
16	Speed problem	R11	Ratio & proportion	AO3	3
Total					**40**

Marks by strand

Number	**9 marks (22%)**
Algebra	**8 marks (20%)**
Ratio & proportion	**9 marks (22%)**
Geometry & measures	**7 marks (18%)**
Probability	**3 marks (8%)**
Statistics	**4 marks (10%)**

Marks by assessment objective

AO1	Standard techniques	**18 marks (45%)**
AO2	Reasoning	**9 marks (22%)**
AO3	Problem solving	**13 marks (32%)**