



**General Certificate Secondary of Education
January 2011**

Methods in Mathematics (Pilot) 9365

Unit 1 Foundation Tier 93651F

Post-Standardisation

Mark Scheme

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

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Glossary for Mark Schemes

GCSE examinations are marked in such a way as to award positive achievement wherever possible. Thus, for GCSE Mathematics papers, marks are awarded under various categories.

- M** Method marks are awarded for a correct method which could lead to a correct answer.
- A** Accuracy marks are awarded when following on from a correct method. It is not necessary to always see the method. This can be implied.
- B** Marks awarded independent of method.
- Q** Marks awarded for quality of written communication. (QWC)
- M dep** A method mark dependent on a previous method mark being awarded.
- B dep** A mark that can only be awarded if a previous independent mark has been awarded.
- ft** Follow through marks. Marks awarded following a mistake in an earlier step.
- SC** Special case. Marks awarded within the scheme for a common misinterpretation which has some mathematical worth.
- oe** Or equivalent. Accept answers that are equivalent.
eg, accept 0.5 as well as $\frac{1}{2}$

M1 Foundation Tier

Section A

Q	Answer	Mark	Comments
1	$45 \times 7 (= 315)$	M1	
	Their $315 \div 60 (= 5.25)$	M1Dep	
	5 (hours) 15 (minutes)	A1	SC2 5 (hours) 25 (minutes) SC1 3 (hours) 15 (minutes)
2(a)	8	B1	
2(b)	$25 - (5 + 3 + 4)$	M1	13
	Their $13 \div 2 (= 6.5)$	M1 Dep	Splitting their 13 into two numbers eg, 6 and 7 seen
	7	A1	
3(a)	(2, 3)	B1	
3(b)	Zero	B1	
3(c)	Marks (and labels) B	B1	
3(d)	3.5, 2	B2ft	B1ft For each ordinate
4(a)	$6 \times 20(p), 1 \times 50 (p)$	B2	B1 For 20p, 50p or seven coins with a total of £ 1.70
4(b)	$6.5(0) - 1.7(0)$	M1	
	£ 4.80	A1	Do not accept 4.8
5(a)	10 and 11	B1	
5(b)	6, 7 and 8	B1	
6	$145 \div 5 \times 3$	M1	oe 145×0.6
	87	A1	

Q	Answer	Mark	Comments
7(a)	$7x$	B1	
7(b)	$4x + 8$	B1	
7(c)	$4x - 4$	B2	B1 Either $4x$ or -4
8(a)	-3	B1	
8(b)	Plots at least 5 of their points correctly	M1 ft	
	Joins their points from $(-3, -5)$ to $(3, 7)$	A1 ft	Follow through their incorrect value from part (a)
9	$4680 \div 100 \times 23 (= 1076.4)$	M1	4680×0.23
	$4680 + \text{their } 1076.4$	M1Dep	4680×1.23 gets M2
	5756.40	A1	Do not accept 5756.4
10	$1 - 0.1 (= 0.9)$	M1	Their 3 values in table add up to 0.9
	Their $0.9 \div 6 (= 0.15)$	M1Dep	
	0.15, 0.3 and 0.45	A1	SC2 Correct numbers in wrong order SC1 $P(C) = 2P(B)$ and $P(D) = 3 \times P(B)$ with all probabilities between, but not including, 0 and 1
11(a)	$517 \div 11 \times 7$ or $517 \div 11 \times 4$	M1	329 or 188
	329 and 188	A1	188 and 329 is M1 A0
11(b)	$228 \div 12 \times 5$	M1	19×5
	95	A1	
12(a)	-0.6 and 1.6	B2	B1 For each SC1 -0.3 and 1.3 or -0.8 and 1.8
12(b)	Any number between -0.6 and 1.6	B1 ft	Between their two values in (a)

Q	Answer	Mark	Comments
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Section B

13(a)	1453	B1	
13(b)	283	B1	
13(c)	153	B1	
13(d)	14	B1	
13(e)	Any numbers between, but not including, -1 and 1	B1	0

14(a)	White	B1	
14(b)	Mark to the left of Evens, within 1 cm of correct position	B1	
14(c)	White, with even chance	B1	Same amount of blue and white
	Full and clear solution	Q1	Strand (ii) - Shows or explains that there are 4 of each colour, or $P(W) = 4/8$

15(a)	$3n$	Q1	Correct notation
15(b)	$n + 4$ and $n - 4$	B2	B1 For either
15(c)	4	B2	B1 Any number from 0 (inclusive) to 5 (exclusive)

16(a)(i)	3×6	M1	List of possibilities written out (at least 16 listed)
	18	A1	oe
16(a)(ii)	$\frac{1}{6}$	B1	oe
16(b)	Shows 5 (x) 6 or at least 2 (other) pairs of factors of 30	M1	5×6 list written out A1 to E6 or A1 to F5
	11	A1	

Q	Answer	Mark	Comments
17(a)	$(12 - 7) \times 2$	M1	
	10	A1	
17(b)	$60 \div 3 - 2$	M1	
	18	A1	
18	Numbers sum to 50	M1	
	a is a multiple of 8 and b is 2 greater	M1	
	c and d are single-digit and $d > c$	M1	
	16, 18, 7, 9	A1	SC3 Correct answers in wrong order
19(a)(i)	$\frac{25}{50}$	B1	oe $\frac{1}{2}$
19(a)(ii)	$\frac{13}{50}$	B1	SC1 Consistent incorrect denominator used from incorrect addition of all numbers in table
19(b)	$\frac{13}{20}$	B2	B1 For correct numerator or denominator
20	$120 \div 10 \times 2 \times 20$	M1	24×20 , 120×4 Correct method seen to get 480
	480	A1	
21	53	B1	
	2-digit prime < 20	B1	11, 13, 17 or 19
	2-digit square, not 64	B1	
	531749	B1ft	Six different digits if B2 awarded SC1 174953 or 495317

Q	Answer	Mark	Comments
22	$\frac{5}{3}$ or $\frac{11}{4}$	M1	$(1 + 2 +) \frac{8}{12} + \frac{9}{12}$ Correct common denominator with at least 1 numerator correct
	$\frac{20}{12} + \frac{33}{12} \left(= \frac{53}{12} \right)$ Correct common denominator for their 2 improper fractions with at least 1 numerator correct	M1Dep	$3 (+) \frac{\text{their } 17}{12}$
	$4\frac{5}{12}$	A1	