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General Certificate of Secondary Education
June 2011

Mathematics 43602F
Foundation
Unit 2

Final

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.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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The following abbreviations are used on the mark scheme:

M	Method marks awarded for a correct method.
M dep	A method mark which is dependent on a previous method mark being awarded.
A	Accuracy marks awarded when following on from a correct method. It is not necessary always to see the method. This can be implied.
B	Marks awarded independent of method.
Q	Marks awarded for quality of written communication.
ft	Follow through marks. Marks awarded for correct working following a mistake in an earlier step.
SC	Special Case. Marks awarded for a common misinterpretation which has some mathematical worth.
oe	Or equivalent.
[*a*, *b*]	Accept values between a and b inclusive.

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1a	14 and 15	B1	Either order
1b	31	B1	
1c	17	B1	
1d	42	B1	
1e	49	B1	

2a	(2, 5)	B1	
2b	Point (6, 1) plotted	B1	
2c	(6, 5)	B1 ft	ft if (6, 1) is wrongly plotted but their D completes a rectangle
2d	(4, 3)	B1 ft	ft for rectangle

3	5 + 9 or 14 or 10 + 18	M1	
	28	A1	

4	Valid mathematical statement for 21	B1	eg in the 7 times table Not a multiple of 5
	Valid mathematical statement for 25	B1	eg square number or factor of 50

5	3 6 9 12 18 8 or 20 or 12 or 4 or 8 20 5 10 15 5	B3	B2 total 31 with 2 correct multiples B1 total 31 with 1 correct multiple or three correct multiples but total not 31 or listing multiples of 3, 4 and 5 (minimum of two multiples of each number)

6	40 ÷ 8 or 5 × 8 (= 40)	M1	oe eg 8, 16, 24, 32 … seen
	5	A1	

7a	D or (£)131 750	B1	
7b	A or (£)132 500	B1	
7c	132 500 – 131 750	M1	ft their answer to parts (a) and (b)
	750	A1 ft	ft their answer to parts (a) and (b)
7d	13 240	B1	Allow 13 240.0 or 13 240.00

8a	11 or –11 or both	B1	
8b	$45 \div 5 \times 3$ or $45 \times 3 \div 5$	M1	oe eg $\frac{60}{100} \times 45$
	27	A1	
8c	$\frac{8}{100} \times 150$ or 8×1.5 or $8 \div 2 \times 3$	M1	oe eg 10% = 15 (1% = 1.5) 2% = 3 so 8% = 15 – 3 or 8% = 4×3
	12	A1	oe eg 12.0 or 12.00

9a	Shows that $5 \div 2$ must be done first so LHS = $17 - 2\frac{1}{2} + 4$	B1	$2\frac{1}{2}$ or 2.5 seen is enough
9b	$(17 - 5) \div 2 + 4 = 10$	B1	
9c	$(17 - 5) \div (2 + 1) \times 4 = 16$	B1	

10	Sight of 12p or 24p or 36p or (£)1.2(0) or (£)3.6(0)	M1	eg 0.12 or 0.24 or 0.36
	7200 ÷ their 36 (= 200) or 72 ÷ their 3.60	M1 dep	oe
	20	A1	SC2 60
	All calculations and working clearly shown	Q1	Strand (iii) Must have both Ms awarded

11a	26	B1	
	80	B1 ft	
11b	((6) – 4) ÷ 2 or (6) ÷ 2 – 2	M1	Condone missing brackets
	1	A1	
	(their 1 – 4) ÷ 2 or their 1 ÷ 2 – 2	M1	
	$-\frac{3}{2}$	A1	oe

12	5647 – 5345 or 302	M1	
	200×24 or 4800 or 48(.00)	M1	
	their $(302 - 200) \times 15$ or 1530 or 15.3(0)	M1	oe
	6330 or 63.3(0)	A1	
	their 63.30	Q1	Strand (i) Correct money notation in £ Do not accept 63.3

13	$51 = 3 \times 17$	B1	oe Multiplications **must** be shown any order
	$55 = 5 \times 11$	B1	
	$58 = 2 \times 29$	B1	

14	Any two of 800 or 2^2 (or 4) or 10 seen	M1	
	$800 \div 40$ or $200 \div 10$ or $80 \div 4$	M1	oe
	20	A1	

15	(50 – 43) red or 7 red or 14 (red) or 36 (blue and yellow)	M1	R + 3Y + Y = 43 or 2R + 3Y + Y = 50 oe or R = 7
	their $36 \div 4$	M1 dep	4Y = 43 – 7 oe
	9	A1	

16a	Plan A	B1	
	Valid reason	B1	eg cheaper (for 800 minutes)
16b	Attempt at any two readings from Plan B slope	M1	eg (600, 30), (700, 60), (800, 90), (900, 120), (1000, 150) need not be coordinates eg 600(min), (£)30 or (£)30, 600(min)
	Compares cost and time or 6000 (÷) 200 or 60 (÷) 200	M1 dep	oe eg (£)30 in 100 (minutes) (£)120 in 400 (minutes)
	30p or £0.30	A1	

17a	$(5x + 3 =) 3x + 6$	B1	
	$5x$ – their $3x$ = their 6 – 3 or $2x = 3$	M1	oe
	1.5	A1 ft	oe ft for linear equation if B0 scored
17b	$2x + 32$ or $4x - 20$	M1	Accept $ax + ab$ for M1
	$6x + 12$ or $6(x + 2)$	A1	
	$a = 6$ and $b = 2$	A1 ft	ft from their $6x + 12$ if M1 earned SC2 $a = 6$ and $b = 12$ SC1 $a = 6$