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General Certificate of Secondary Education
June 2012

Mathematics 43602F
Foundation
Unit 2

Final

Mark Scheme

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UMS conversion calculator www.aqa.org.uk/umsconversion

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.
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	Accept any two whole numbers ending in a 0 or 5	B1	eg 0, 5, 10, 15, 20
1b	Any two of 1, 2, 3, 6, 9 or 18	B1	
1c	Any two of 16, 25, 36 or 49	B2	B1 for 1 correct and 1 incorrect. B1 for any two of 4^2,5^2,6^2,7^2 B1 for any two other square numbers
2	30 or 5	M1	Allow 30.0 or 5.0
	150	A1	Allow [145,156], but not 153.92 rounded.
3a	17	B1	
3b	55	B1	
3c	9	B1	
3d	180	B1	
4	6 × 85 or 510 or 6 x 0.85 or 5.1(0)	B1	States that saving is equal to two tins. Seen or implied.
	4 × 85 or 340 or 4 x 0.85 or 3.4(0)	B1	2 x 85 or 170 or 2 x 0.85 or 1.7 if it is their final calculation.
	1.70	Q1	Strand (i) Do not accept 1.7
5a	1200	B1	
5b	120 000	B1	
5c	10^6	B1	

6a	(0).8(0)	B1	

6b	$\frac{7}{10}$	B1	oe eg $\frac{14}{20}$, $\frac{70}{100}$

6c	(0).75	B1	

6d	0.7, $\frac{3}{4}$, 80(%)	B1 ft	In any format Allow correct answer or ft from their answers to a,b,c.

7	$\frac{15}{100}$ or 0.15 seen	M1	oe eg (10% =) 300 or (5% =) 150 or (1% =) 30
	$\frac{15}{100}$ x 3000	M1dep	oe 300 + 150
	450	A1	
	Yes	Q1ft	Strand (iii) Correct conclusion from their answer. Must have scored 1st M1.

8a	50	B1	

8b	$(2y) = 8 + 3$ *or* $(2y) = 11$	M1	
	$5\frac{1}{2}$ or 5.5 or $\frac{11}{2}$	A1	oe

8c	$5m - 7p$	B2	B1 for $5m$ or $-7p$ Award B1 if further working seen after correct answer

9	Sight of 98 or 99	B1	
	98 + 99 (= 197)	M1	
	43	A1	SC2 for 42 [from 240 – (2 × 99)] SC1 for any three 2-digit numbers that total 240

10	A = 6	B1	
	B = 5	B1 ft	(22 – 2 × their A) ÷ 2
	C = 10	B1 ft	26 – their A – 2 × their B
	D = 7	B1 ft	28 – their A – their B – their C

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11	5 × 3 and (–) 4 x ½ Or 15 and (–) 2	M1	
	13	A1	

12	$n^2 – 1$ worked out correctly for at least one value of n	M1	0, 3, 8, 15, 24, 35 …
	A correct calculation eg $6^2 – 1 = 35$ (= 7 × 5) or $8^2 – 1 = 63$ (= 7 × 9)	A1	oe If incomplete eg $6^2 – 1$ or $n = 6$ award M1 A0

13	$3a \geq 2 – 5$ or $3a \geq –3$	M1	
	$a \geq – 1$	A1	SC1 for –1 or $a = –1$ or $a > –1$

14	60 × 2.5 (= 150)	M1	
	25 × 5 (+) 20 × 4 or 205	M1	
	their 150 + 100 – their 205	M1	oe
	45	A1	
	their 45 ÷ 15	M1dep	Dependent on 3rd M1
	3	A1 ft	
	Alternative method		
	5 – 2.5 and 4 – 2.5 or 2.5 and 1.5	M1	
	25 x their 2.5 (+) 20 x their 1.5, or 92.5	M1	
	100 – their 92.5	M1	oe
	7.5	A1	
	Their 7.5 ÷ 15 or 0.5 (+ 2.5)	M1dep	Dependent on 3rd M1
	3	A1ft	

15a	48	B1	

15b	14 (+) 20 (+) 10	M1	oe Allow one error
	44	A1	SC1 for 45

15c	E to F	B1	
	Steepest (gradient)	B1	oe

16	600 and 50 and 200	B3	B2 for any two of 600, 50, 200 B1 for any one of 600, 50, 200 or for sight of $\frac{2}{3}$ or $\frac{3}{2}$ oe, or for sight of 2:3 or 3:2 oe Accept 66%,67%,150% If no correct values seen, B1 for any correct proportion eg Potatoes = 3 x stock Potatoes = 12 x carrots Stock = 4 x carrots

17	$w^2 + 6w$	B2	B1 for w^2 or (+) $6w$ Award B1 if further working seen after correct answer

18a	Identifies at least 1 pair of factors 2 (x) 63, 3 (x) 42, 6 (x) 21, 7(x) 18, 9 (x) 14	M1	Accept eg 3,6,7 Do not accept 1 (x) 126
	2 × 3 × 3 × 7	A1	oe must see multiplication signs SC1 for 2 (x) 3 (x) 7

18b	Identifies at least 1 pair of factors 2 (x) 36, 3 (x) 24, 4 (x) 18, 6 (x) 12, 8 (x) 9	M1	or 2 (x) 2 (x) (2) (x) 3 (x) 3 Do not accept 1 (x) 72
	18	A1 ft	SC1 for 6 or 9 or 2 x 3 x 3

19	(Billie = £)8 $\left(\frac{2}{3} =\right)$ 8	B1	
	their 8 ÷ 2 × 3 (= 12)	M1	oe
	their 12 ÷ 4 × 5	M1	oe
	15	A1	