AQA

General Certificate of Secondary Education

Mathematics 4307
Specification B

Module 3 Tier F   43053F

Mark Scheme

2010 examination - March series

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.

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.

E   Marks awarded for an explanation.

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.

MODULE 3 FOUNDATION TIER   43053F

1	5 (hours)	B1	$3 \times 6.8(0) = 20.4(0)$ or $2 \times 6.8(0) = 13.6(0)$
	their $(3 + 2) \times 6.8(0)$	M1	oe their $20.4(0)$ + their $13.6(0)$
	34(.00)	A1	SC2 digits 34

2(a)(i)	168	B1	
2(a)(ii)	200	B1 ft	
2(b)	28	B1	Accept -28
2(c)	269	B1	
2(d)	31 and/or 37	B1	B0 any other values

3(a)	9651	B1	
3(b)	1695 or 1965 or 6195 or 6915 or 9165 or 9615	B1	
3(c)	1596	B2	B1 for 1956 or 5196 or 5916 or 9156 or 9516 or 1569
3(d)	Fraction with numerator < denominator that uses digits 1, 5, 6 and 9	B1	
3(e)	$9 + 6 + 5 - 1$ or $9 + 5 + 6 - 1$ or $6 + 9 + 5 - 1$ or $6 + 5 + 9 - 1$ or $5 + 9 + 6 - 1$ or $5 + 6 + 9 - 1$	B1	

4(a)	10 ÷ 1.45 or 1000 ÷ 145 or 6.8(…) or 6.9	M1	Adds six or seven 1.45s (8.7(0) or 10.15) or takes six or seven 1.45s off 10(.00) (1.3(0) or −(0).15)	
	6	A1		
4(b)	3 tickets cost (£)20 × 2 (= 40)	M1	40	
	6 tickets cost (£)20 × 4 (= 80)	M1	40 and 40	
	80 + 1 (normal price) ticket or 80 + 20 or 7 cost 100	A1	40 and 40 and 20	
	Alternative method			
	5 or 6 or 7 × 20 (= 100 or 120 or 140)	M1		140
	Sight of 2 free	M1	eg −2 × 20	(−)40
	(so 7 tickets) = 100	A1		140 − 40

5(a)	52.4	B1	Do not allow 52.40
5(b)	50	B1	

6	56 ÷ 4 (= 14)	M1	
	3 × their 14 (= 42) or 56 − their 14 (= 42)	M1 dep	M2 sight of 36 $\frac{3}{4}$ × 56 or 78 − 3 × their 14
	$\frac{78 - \text{their } 42}{2}$ $\left(= \frac{36}{2} \right)$	M1 dep	
	18	A1	

7(a)	165 ÷ 55	M1	oe
	3	A1	
7(b)	0.4(0) × 55 (= 22)	M1	oe 1 − 0.4 (= 0.6) oe
	55 − their 22	M1 dep	their 0.6 × 55
	33	A1	

8(a)	12	B2	B1 for any other multiple of 12 B1 for 12 unsimplified eg 2×6
8(b)	28	B1	
8(c)	2 ($\times$) 46 or 4 ($\times$) 23 or 2 ($\times$) 2 ($\times$) 23	M1	Allow 1 ($\times$) 2 ($\times$) 46 or 1 ($\times$) 4 ($\times$) 23
	$2 \times 2 \times 23$	A1	$2^2 \times 23$

9(a)	6100	B2	B1 for correct answer fully or partly in words eg 6 thousand 100 B1 300 (+) 5800
9(b)	Ten thousand	B2	B1 for 10 thousand or 10 000

10	Attempt to scale costs to the same number of pints eg 90(p) $\div$ 2 (= 45(p)) **and** (£)1.68 $\div$ 4 (= (£)0.42 or 42(p))	M1	90(p) $\times$ 2 (= 180(p) or (£)1.80) **or** (£)1.68 $\div$ 2 (= (£)0.84 or 84(p)) (£)1.68 $-$ 90(p) (= (£)0.78 or 78(p))
	Correct value(s) and 4 pints indicated	A1	oe any clear indication Answer only is M0 A0

11(a)	35 and 47.5 seen (either order)	B2	oe $47\frac{1}{2}$ B1 for one correct value seen
11(b)	0.19 and 0.03 seen (either order)	B2	B1 for one correct value seen

12(a) (i)	0.2(0)	B1	
12(a) (ii)	0.02	B1	
12(b)	Fully correct explanation eg All three times are less than 10(s) and (3 $\times$ 10 =) 30(s) or 29.49(s) (is less than) 30(s)	B2	B1 for partially correct explanation eg 29.49 or 30 all 3 times < 10

13(a)	202 or 212 or 222 or 232 or 242 or 252 or 262 or 272 or 282 or 292	B1	Accept, for example 211.2 or 214.412
13(b)	7997 or 7999.9997	B2	B1 for 8008 or 8000.0008

14	25% of 84	B1	
	$\dfrac{25}{100} \times 84$	M1	or $\dfrac{84}{4}$
	21	A1 ft	SC1 Answer 21 but would not score B or M mark

15(a)	34	B1	
15(b)	$\dfrac{3}{10}$	B2	B1 for any equivalent fraction eg $\dfrac{12}{40}$ $\dfrac{6}{20}$
15(c)	Valid common denominator with at least one numerator correct	M1	eg $\dfrac{(10)}{12}$ (+) $\dfrac{(3)}{12}$
	$\dfrac{13}{12}$ or $1\dfrac{1}{12}$	A1	oe fraction
15(d)	$\dfrac{1}{2}$	B1	

16(a)	−832	B1	
16(b)	(+)25	B1	
16(c)	−9	B1	

17	200 × 3 (= 600)	M1	M2 for 200 × 4 (= 800) **and** their 800 − (200 + 350)
	their 600 − 350	M1 dep	
	250	A1	

18	210 − 150 (= 60)	M1	$\dfrac{210}{150} \times 100$ (= 140)	$\dfrac{210}{150} - 1$ (= 0.4)
	$\dfrac{\text{their } 60}{150} \times 100$	M1 dep	their 140 − 100	their 0.4 × 100
	40	A1		