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ASSESSMENT and QUALIFICATIONS ALLIANCE

General Certificate of Secondary Education

Mathematics 4302

Specification B

Module 3 Tier F 43003F

Mark Scheme

2008 examination - November 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.

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The following abbreviations are used on the mark scheme:

M	Method marks awarded for a correct method.
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.
M dep	A method mark which is dependent on a previous method mark being awarded.
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.
eeoo	Each error or omission.

MODULE 3 FOUNDATION TIER 43003F

1(a)	Forty thousand	B1	All in words
1(b)	1001	B1	
1(c)	5310 5302 5290	B1	

2(a)(i)	2.76×8 or 276×8	M1	
	22.08	A1	Answer 2208 M1 A0
2(a)(ii)	$6 \times 8 - 9$ or $6 \times 6 + 3$	M1	$48 - 9$ or $36 + 3$
	39	A1	
2(b)	£2 50p 20p 5p 1p	B1	Any order. Condone absence of p but must have £2

3(a)	270	B1	
3(b)	300	B1	
3(c)	$395 \leq$ number < 400 or $400 <$ number < 405	B1	Do **not** accept 400 or 405

4(a)	$\frac{2}{5} \times 175$	M1	oe eg $175 \div 5 \times 2$
	70	A1	
4(b)	Valid explanation	B1	175 is not (exactly) divisible by 2 175 is odd Cannot have half a boy
4(c)	175×8	M1	oe
	1400	A1	

5	0.35×620 oe	M1	(10(%) =) $620 \div 10$ (= 62) (5(%) =) their $62 \div 2$ (= 31) $3 \times$ their 62 + their 31
	217	A1	SC1 Answer 403

6	64.3 – 57.4 (= 6.9)	M1	64.3 ÷ 3 (= 21.43…) and 57.4 ÷ 3 (= 19.13…)
	their 6.9 ÷ 3	M1 dep	their 21.43… – their 19.13…
	2.3	A1	Digits 23 implies M2

7(a)(i)	28 224	B1	
7(a)(ii)	30 000	B1 ft	ft from value > 1 sf seen
7(b)	6	B1	

8(a)	$\frac{3}{4}$ ($\times 100$)	M1	oe eg $1 - \frac{1}{4}$ ($\times 100$)
	75	A1	SC1 Answer 25 Answer 25 (and) 75 M1 A0
8(b)	20 000 ÷ 5 × 3	M1	oe
	12 000	A1	SC1 Answer 8000

9(a)	1200 × 0.85 oe	M1	
	1020	A1	
9(b)	$\frac{18}{240}$ × 100	M1	oe
	7.5	A1	

10	8(.00)	B1	Do not accept 8.0
	7.50	B1	Do not accept 7.5
	1.80	B1	Do not accept 1.8
	17.30	B1 ft	ft the sum of their 3 values Note: Penalise incorrect money notation a maximum of one time

11(a)	8 3 19	B1	Any order
11(b)	16 and/or 36	B1	Do not accept other square numbers
11(c)	8	B1	

12(a)	0	B1	
12(b)	362	B1	
12(c)	120	B1	
12(d)	1000	B1	
12(e)	–4	B1	

13	152 ÷ 4	M1	oe eg halve 152 and halve again
	38	A1	

14	Attempts to work out 13 minutes before 14:07	M1	14:02 oe seen or 13:59 oe seen
	13:54 or 1.54 (pm)	A1	Allow 6 minutes to 2 SC1 1.54 am

15(a)	0.04	B1	
15(b)	5.33	B1	
15(c)	Grid method, 3 correct from 6000 1200 210 1200 240 42 or Napier's Bones method, 3 correct from 06 12 21 12 24 42	M1	Attempt at 247 × 30 (answer must end with 0) and 247 × 6
	Adds their six values or adds their diagonals	M1 dep	Adds their two values
	8892	A1	

16	40 or 0.5	M1	
	80	A1	$\frac{80}{1}$ M1 A0

17	Works out cost of at least 1 visit with Club membership ie $10 + 3$ (= 13)	M1	Works out difference after at least 1 visit ie $10 + 3 - 6$ (= 7)
	Works out **both** costs for at least 3 visits ie $10 + 3 \times 3$ (= 19) and 3×6 (= 18)	M1 dep	Works out difference in costs for at least 3 visits ie their $7 - 2 \times 3$ (= 1)
	4	A1	4 with incorrect or no method is 0 4 with unclear/incomplete method is 3 4 with arithmetic error can get M2 if method shown

Alt 17	Works out saving for at least 1 visit ie $6 - 3$ (= 3)	M1	
	Works out saving for at least 3 visits ie their 3×3 (= 9)	M1 dep	
	4	A1	

18	346.68 – 6.42	M1	
	340.26	A1	

19	4 (+) $\frac{4}{3}$	M1	oe fraction eg $4\frac{4}{3}$ or $\frac{16}{3}$ or $4\frac{8}{6}$
	$5\frac{1}{3}$	A1	

20	2 (×) 18 or 3 (×) 12	M1	2 (×) 2 (×) 9 or 4 (×) 3 (×) 3 or 2 (×) 3 (×) 6 Condone × 1
	$2 \times 2 \times 3 \times 3$	A1	$2^2 \times 3^2$