



General Certificate of Secondary Education

Mathematics 4302

Specification B

Module 1 Tier F 43001F

Mark Scheme

2008 examination - June 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.

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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 1 FOUNDATION TIER

43001F

Note: Probability - Accept fraction, decimal or percentage. Do not accept ratio.

1(a)	15	B1	
1(b)	50 – 20 or 3×10 (3 extra symbols)	M1	
	30	A1	
1(c)	2 whole symbols	B1	
	1 half symbol	B1	

2	$30 + 21 + 32 + 19 + 26 + 20 + 22 + 18 + 40 + 22$	M1	At least 9 values added 210 - 290 with no working implies M1
	their $250 \div 10$	M1 dep	\div can be implied from their answer
	25	A1	$230.2 \Rightarrow$ SC2

3(a)	$\frac{90}{360} \times 36$ or $\frac{1}{4} \times 36$ or $90 \div 10$	M1	oe
	9	A1	
3(b)	Correct method seen or implied by one correct angle $\pm 2^\circ$	M1	eg $\frac{480}{1800} \times 360$ or $480 \div 5$
	At least 3 correct angles seen or implied	A1	$\pm 2^\circ$ 'labels' correct
	All 4 angles drawn correctly $96^\circ, 64^\circ, 120^\circ, 80^\circ$	A1	$\pm 2^\circ$ Exactly 4 sectors
	Exactly 4 sectors drawn and all labelled in correct order of size	B1	

4(a)	$12 + 7 (= 19)$	M1	
	$\frac{19}{50}$ or 0.38 or 38%	A1	SC1 $\frac{12}{50}$ or 0.24 or 24% or $\frac{6}{25}$
4(b)	Explanation that the original data is not known/we don't know if any of the 18 people spent exactly £8	B1	Accept: The data has been grouped
4(c)	$(18 \times 5) + (13 \times 15) + (12 \times 25) + (7 \times 35)$ or $90 + 195 + 300 + 245$ or 830	M1	Attempt at $\sum fx$ with at least 3 "correct" products using "midpoints" within or on the boundaries
	their $830 \div 50$	M1 dep	Can be implied by answer
	16.60 (not 16.6)	A1	207.5 with no working implies M1M0A0 589.9 implies M1M0A0 16.6 with no working \Rightarrow M2 1660p \Rightarrow 3

5(a)	Likely	B1	
5(b)	Impossible	B1	
5(c)	Certain	B1	

6(a)	19	B1	
6(b)	$18 + 11$	M1	At least one correct Addition can be implied from answer
	29	A1	
6(c)	$18 + 15 + 23 + 11 + 21$ or 88 or $11 + 19 + 17 + 26$ or 73	M1	Alternative: Differences used (18 – 11), (19 – 15), (23 – 17), (26 – 11) (or v.v.) or 7, 4, 6, 15 Allow ± 1 on one MR only
	88 men and 73 women	A1	13 men and 19 women
	their 88 – their 73 (must be ≤ 88) must see both	M1 dep	21 – their (19 – 13) or 21 – their 6 Can be implied from answer
	15	A1	

7(a)	21	B1	
7(b)	18	B1	
7(c)(i)	Stays the same	B1	
7(c)(ii)	Increases	B1	

8(a)(i)	(0) (+) 8 (+) 12 (+) 3	M1	
	23	A1	
8(a)(ii)	(0) (+) 5 (+) 12 (+) 2	M1	
	19	A1	
8(b)	No box for zero or no TV watched Gap between 0 and 1 or gap between 3 and 4 or there are gaps 4 - 6 and 6 - 8 overlap	B2	Any two criticisms B1 for each correct criticism B2 for a completely correct alternative response section with at least 3 boxes - covering all possibilities with no overlap