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ASSESSMENT and QUALIFICATIONS ALLIANCE

General Certificate of Secondary Education

Mathematics 4307

Specification B

Module 1 Tier F 43051F

Mark Scheme

2008 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.

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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 43051F

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

1(a)	12	B1	
1(b)	$5\frac{1}{2}$ or 5.5	B1	
1(c)	1	B1	
1(d)	15 + 16	M1	
	31	A1	
1(e)	20 – 8	M1	
	12	A1	

2(a)	Vertical scale does not start from zero The horizontal scale is not linear No £ sign or labelling on Sales or title or what it is about	B2	B1 each for two reasons oe
2(b)	6200 + 7000 + 6700 + 7900 + 9700 or 37 500	M1	
	$\frac{\text{their } 37500}{5}$	M1 dep	
	7500	A1	29 740 with no working SC2

3(a)	$\frac{26}{120} \times 360$ or 26×3	M1	Any correct method seen or implied
	78º, 195º, 63º, 24º	A1	At least 3 correct angles seen or implied
	Exactly 4 sectors drawn (each within ± 2º)	B1	
	Correct labelling - must be only 4 sectors	B1	In proportion to size eg car in biggest sector etc
3(b)	Overlapping responses	B1	Accept fully correct alternative with at least 3 boxes

4(a)	Plotting all points correctly $\pm\frac{1}{2}$ square	B2	B1 for 5 or 6 points correct $\pm\frac{1}{2}$ square (ignore extras)
4(b)	Strong positive	B1	or fairly strong or quite strong
4(c)	Straight ruled line passing on or between (21, 40) and (25, 36) and between (15, 20) and (15, 30) extending from 11 to 32 on length axis	B1	
4(d)	About "33"	B1 ft	ft their "straight" line with positive gradient ($\pm\frac{1}{2}$ sq) not zig-zag
4(e)	Value outside given range of data	B1	Danger of extrapolation Not "not enough data"

5(a)	Correct tallies	B1	Using 5 bar gates or clear blocks of five bars
	Frequencies (6, 3, 5, 2, 4)	B1 ft	
5(b)	Drama	B1	
5(c)(i)	8	B1	
5(c)(ii)	3	B1	
5(c)(iii)	1 circle	B1	
	$\frac{3}{4}$ of a circle	B1	

6(a)(i)	9	B1	
6(a)(ii)	$\frac{8}{15}$	B2	Sight of 8 B1
6(b)	$\frac{19+1}{2}$ = 10th position	M1	or 1 in middle position or listing numbers in order and identifying 10th
	10th = 3	A1	1 $\Rightarrow$ median is 3
6(c)	24	B2	25 seen B1

7(a)	R$\left(\frac{1}{8}\right)$ W$\left(\frac{2}{8}\right)$ Y$\left(\frac{5}{8}\right)$	B3	B1 each
7(b)	0	B1	Accept $\frac{0}{8}$, zero, impossible, no chance oe
7(c)	$\frac{7}{8}$	B1	oe
7(d)	No, because the spinner can land on any of the 3 colours each time it is spun	B1	Not "random"

8	8 + 6 + 1 or 15	M1	
	$\frac{\text{their } 15}{20} \times 80$	M1 dep	or $\left(1-\frac{5}{20}\right) \times 80$ or scaling by a factor of 4
	60	A1	Watch for 80 – 20; $\frac{60}{80}$ lose A1