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General Certificate of Secondary Education
November 2010

Mathematics 43051F

Foundation

Module 1

Final

Mark Scheme

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.
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.

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1ai	Week 3 both bars correct Men 6 Women 7	B1	If no shading assume correct order (men then women) Ignore 'no gaps' and inconsistent widths
	Week 4 both bars correct Men 9 Women 3	B1	
1aii	Valid working seen ie 8 + 6 or 14 and any 1 separate addition or total seen	M1	eg 8 + 6 or 14 and 6 + 7 or 13 14 and 9 or 13 or 12
	Week 2	A1	
1b	(Men) 5 + 8 + 6 + 9 or 28 or (Women) 4 + 6 + 7 + 3 or 20	M1	4 values added for men or women Allow one error on each reading
	their 28 – their 20 Can be implied from 1st M1 and answer	M1 dep	
	8	A1	
	Alternative method		
	1, 2, –1, 6	M1	Differences seen, allow one error or omission
	their (1 + 2 + –1 + 6)	M1 dep	Four differences added
	8	A1	

2a	Maurice or Greene or both	B1	Accept (June) 1999 and 9.79
2b	9.92 – 9.72	M1	Allow 9.72 - 9.92 and 9.72 to 9.92
	0.2	A1	oe
2c	Attempt to sum values 9.92 + … + 9.72	M1	Can be implied by total 68.73 to 88.57 inclusive
	$\frac{\text{their } 78.65}{8}$	M1 dep	May be implied from their answer if their total is within the range
	9.83 or better	A1	If 9.83125 seen ignore further working SC2 for 9.8 with no working SC2 for 70.14(5) with no working
2d	0.14	B1	

3a	4	B1	
3b	19	B1	
3c	0 2 0 1 1 1 1 2 0 1 1 0	B2	Allow tallies, crosses, marks, ticks or integers, 0s may be blank Allow B1 for 8 - 11 entries correct Mark their best solution offered SC1 for all names entered correctly

4a	2000 – 140 or 1860 seen	M1	
	$\frac{1860}{2000}$	A1	oe fraction or decimal 0.93 SC1 $\frac{140}{2000}$ oe not 2000 ÷ 140
4b	0.30 + 0.10 (= 0.40)	M1	2000 × 0.3 (= 600) or 2000 × 0.1 (= 200) or 2000 × any other probability in table eg 2000 × 0.17 (= 340)
	their 0.40 × 2000	M1	their 600 (+) their 200 or their 600 or their 200 (+) MR expectation (eg 600 (+) 2000 × 0.17)
	800	A1	$\frac{800}{2000}$ A0 800 out of 2000 M2 A1
	Allow use of 1860 or 140 throughout giving final answers of 744 or 56		
	Alternative method		
	(0.18 + 0.17 + 0.25) × 2000	M1	
	2000 – their 1200	M1	
	800	A1	
	Allow use of 1860 or 140 throughout giving final answers of 744 or 56		

5a	4	B1	
5b	Women 14	B1 ft	ft only for even key here or correct
	Boys 32	B1 ft	ft any key or correct
5c	2 whole hot cross buns and $\frac{1}{2}$ bun	B1 ft	
5d	their 14 + 10	M1	
	24	A1 ft	ft their number for women (or correct)
5e	$\frac{1}{4}$ × 60 (= 15) or 90 ÷ 6	M1	oe
	their 15 – 10	M1 dep	Not 60 – 10 or 90 – 10
	5	A1	

6a	P at $\frac{1}{8}$ G at $\frac{3}{8}$ Y at $\frac{4}{8}$	B3	Each within 2 mm of correct positions B1 each
6b	100 + 400 or 500	M1	or $1 - \frac{300}{800}$
	$\frac{500}{800}$ or 0.625	A1	oe SC1 for $\frac{100}{800}$ **and** $\frac{400}{800}$ seen

7a	All 8 points plotted correctly $\pm\frac{1}{2}$ sq	B2	B1 for 6 or 7 points correct
7b	Strong positive	B2	B1 each word correct, allow fairly strong No contradictions
7c	F	B1	

8a	She is only selecting customers that buy the supermarket's own brand	B1	
8b	Using any appropriate/valid method of her choosing an unbiased sample	B1	eg ask the first 100 customers that enter the store or do a taste testing in store or select 50 own and 50 other etc
8ci	The price of the supermarket's own brand of baked beans will go above the competitor's price	B1	or vice versa Must comment on both eg own brand (price) goes up, competitors goes down Own brand goes higher than the other
8cii	Decrease in sales/less popular **and** valid reason	B1	eg might not sell as much as more expensive/same price Not as popular as brand prices have decreased