



General Certificate of Secondary Education

Mathematics 4307

Specification B

Module 1 Tier F 43051F

Mark Scheme

2007 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 1 FOUNDATION TIER

43051F

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

1 out of 3 or 1 in 3 penalise once on whole paper.

1(a)(i)	Turnip or T	B1	
1(a)(ii)	12 – 9	M1	
	3	A1	
1(a)(iii)	9 + 6 + 12 + 5	M1	16 × 2
	32	A1	
1(b)	CB, CP, CT, BP, BT, PT	B2	B1 for 4 or 5 correct - ignore others

2(a)	7, 8, 10, 12, 13, 16, 18, 19, 19, 21, 22	M1	Ordering, allow one number missing or repeated
	16	A1	
2(b)	7 + 8 + 10 + 12 + 13 + 16 + 18 + 19 + 19 + 21 + 22 or 165	M1	Attempt to find sum. Accept total of 143 - 187
	their 165 ÷ 11	M1 dep	Using calc incorrectly M1M1A0
	15	A1	

3(a)	<table border="1"> <tr><td>10</td><td>0 9</td></tr> <tr><td>11</td><td>1 8 8</td></tr> <tr><td>12</td><td>1 3 8 9</td></tr> <tr><td>13</td><td>2 5 7</td></tr> <tr><td>14</td><td>4 6</td></tr> </table>	10	0 9	11	1 8 8	12	1 3 8 9	13	2 5 7	14	4 6	B2	B1 for unordered or 3 ordered lines correct
	10	0 9											
11	1 8 8												
12	1 3 8 9												
13	2 5 7												
14	4 6												
	Key completed using any 3 digit number ≥ 100	B1											
3(b)	Question with time frame	B1	Time frame can be in response										
	Response boxes - at least 3, not overlapping covering all possibilities	B1											

4(a)	Heights correct	B1	$\pm \frac{1}{2}$ square
	Their heights plotted on months and joined with “straight” lines or dotted lines	B1	$\pm \frac{1}{2}$ square
4(b)	Increases until July then decreases/Increases in summer then decreases	B1	

5(a)(i)	$\frac{7}{25}$ or 0.28 or $\frac{112}{400}$	B1	oe
5(a)(ii)	$\frac{19}{100}$ or 0.19 or $\frac{76}{400}$	B1	oe
5(b)	Josh because he carried out more trials	B1	

6(a)	Blue	B1	
6(b)	$\frac{1}{4}$ identified on probability scale	B1	± 2 mm

7(a)	Correct tallies Correct frequencies - 7, 10, 13	B2	B2 for correct table, B1 for three or more correct entries
7(b)	Child	B1	
7(c)	Linear scale from zero	B1	Vertical or horizontal
	Bars at correct heights and equal widths	B1 ft	$\pm \frac{1}{2}$ square ft or correct
	Labels for man, woman, child	B1	
7(d)	10 + 8 or 18 adults	M1	
	15 (children) 18 (adults)	M1	
	He is not correct	A1	

8(a)(i)	$\frac{1}{12}$	B1	
8(a)(ii)	9, 10, 11, 12 or 4 alone	M1	Must not be from cancelling incorrect prob
	$\frac{4}{12}$	A1	0.33 or better
8(a)(iii)	1, 4, 9 or 3 alone or $1^2, 2^2, 3^2$	M1	Must not be from cancelling incorrect prob
	$\frac{3}{12}$	A1	oe
8(b)	Any event with probability $\frac{6}{12}$	B1	eg an even number/odd number/ number less than 7/number greater than 6

9(a)	32 added for girls - bus	B1	
	14 added for boys - car	B1	
	$100 - (28 + \text{"32"} + 1)$	M1	or $200 - (42 + \text{"14"} + 28 + 38 + \text{"32"} + 6 + 1)$
	39	A1	
9(b)	$\frac{70}{200} \times 1000$ or 70×5	M1	or $1000 - 650$
	350	A1	