



General Certificate of Secondary Education

Mathematics 4307

Specification B

Module 1 Tier F 43051F

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.

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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)	110 – 52	M1	
	58	A1	
1(b)	3	B1	
1(c)	3 bars of correct lengths $\pm \frac{1}{2}$ sq (30, 27, 15)	B2	One or two correct B1
	Correctly labelled according to size	B1	Minke, Killer, Beluga

2(a)(i)	0.25 or $\frac{1}{4}$	B1	
2(a)(ii)	Range = 8	B1	
	Ordering	M1	
	Median = 4	A1	
2(b)	Any single digit < 3	B1	-9, -8, -7, ... 0, 1, 2

3	... John jogs further than Pam	B1	
	... Pam is more consistent with her jogging distances than John	B1	oe

4	$1 - (0.4 + 0.25 + 0.05)$	M1	or 0.3
	$\frac{1}{2} \times 0.3$	M1 dep	oe
	0.15	A1	0.15, 0.15 in table only 3 0.15 in D but wrong answer \Rightarrow 2 marks

5(a)	Correct total number of sixes 24, 27, 31	B1	All 3 correct
	Any correct relative frequency seen in the correct cell	M1	eg $\frac{24}{80}$ (= 0.3)
	0.3, 0.3, 0.31	A1	All 3 correct oe
5(b)	Graph completed with the points $\pm \frac{1}{2}$ sq for 5th 6th 7th points given	B1	
	Graph completed with the points $\pm \frac{1}{2}$ sq for their 3 points	B1	ft their 8th 9th and 10th values Must be on the given graph
5(c)	Yes ticked with any reason	B1	Or Yes on answer line or biased Not 'don't know'
	Because their "0.31" $> \frac{1}{6}$	B1	

6(a)	False	B1	
6(b)	True	B1	
6(c)	True	B1	
6(d)	False	B1	

7(a)(i)	300	B1	
7(a)(ii)	One and a half bottles	B1	
7(b)	Fruit drinks	B1	
7(c)	Cannot easily draw 0.39 of a bottle	B1	Cannot easily draw a fraction of a bottle

8(a)(i)	40%	B1	
	180°	B1	
	36° and 144°	B1	
8(a)(ii)	Exactly 3 sectors, each $\pm 2^\circ$	B1	180°, 36° or 144°
	Exactly 3 sectors labelled C, O, P according to size	B1	oe
8(b)	5 × 90	M1	oe
	450	A1	

9(a)	As the journey lengths increase the taxi-fare increases	B1	Positive (correlation) oe
9(b)	Suitable “straight” line	B1	
9(c)	Approx £9 $\pm \frac{1}{2}$ sq must be £ and pence if pence included	B1 ft	ft an increasing line or curve or zig-zag
9(d)	100 miles is outside the range of the data (NOT off the graph)	B1	Correlation may change as journey length increases beyond the given data range or danger of extrapolation

10(a)	May	B1	
10(b)	Jul	B1	
10(c)	Incorrect with any reason	B1	
	eg The hotter months (Jul and Aug) did not have less rain than May or Jun or comparing any pair of months eg July is hotter than May but had more rain	B1	oe