AQA

ASSESSMENT and
QUALIFICATIONS
ALLIANCE

General Certificate of Secondary Education

Mathematics 3302
Specification B

Module 1 Tier F 33001F

Mark Scheme

2006 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.

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.

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   33001F

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)	30	B1	
1(b)	Friday	B1	Not 34
1(c)	22 or 16	M1	
	38	A1	
1(d)	Boys 22 + 16 + 30 + 10 + 34 or girls 16 + 25 + 26 + 20 + 31 or 112 or 118	M1	List must have 5 numbers and at least 3 correct or differences eg boys +6, –9, +4, –10, +3
	112 and 118	A1	Totalling differences boys –6 or girls +6
	Comparison of totals that girls are more or Graham is wrong	A1 ft	No marks for just 'No' with no working

2	P T N	B3	B1 each correct answer; allow I for N

3	Correct method seen eg $\frac{360}{720}$ × 280 or 280 ÷ 2 or 280 × 0.5	M1	or one correct sector on diagram with correct label
	4 or 5 correct angles seen 140°, 85°, 60°, 45° 30°	A1	
	All 5 sectors drawn correctly	A1	±2°
	All 5 sectors labelled in correct proportion of size	B1	

4	Not ordered	B1	Numerical answers only do not score <u>but</u> if no marks awarded allow SC1 for 69, 70, 72
	7 omitted in stem	B1	
	69 only appears once/or two 69's or only 14 values	B1	

5	(0 × 6) + (1 × 7) + (2 × 9) + (3 × 4) + (4 × 3) + (5 × 1) or 54	M1	Attempt at ∑*fx* at least 4 pairs seen
	their 54 ÷ 30	M1 dep	
	1.8	A1	60 ÷ 30 with no working SC1

6(a)	16, 12, 8, 14	B1	Frequency column completed
6(b)	Horizontal axis labelled with S, B, R, C and equal width bars	B1	Ignore gaps 3 labels sufficient
	Vertical axis numbered correctly	B1	From zero
	Bars at correct height	B1 ft	Must be from a linear scale; tolerance $\frac{1}{2}$ square
6(c)	Raspberry	B1	

7(a)	55	B1	
7(b)	One whole and one half symbol drawn in five bed houses	B1	
7(c)	40 + '55' + 30 + 15	M1	'14' × 10 Add up symbols and multiply by 10
	140	A1 ft	

8(a)	24, 24, 24, 25, 26, 27, <u>27, 29</u>, 31, 32, 32, 34, 35, 36	M1	Ordering and indicating middle
	28	A1	
8(b)	12	B1	

9(a)	3 5 7 4 6 8 5 7 9 6 8 10	B2	B1 for 3 rows or 2 columns correct
9(b)(i)	$\frac{1}{12}$	B1 ft	ft from fully completed table provided answer is not zero
9(b)(ii)	Indicating 8, 8, 9, 10 or sight of '4'	M1	May be indicated in table
	$\frac{4}{12}$ or $\frac{1}{3}$	A1 ft	ft from fully completed table provided answer is not zero

10	Finding prob of 2 1 – (0.2 + 0.4 + 0.1) or 0.3	M1	Alternative method 0.2 × 20 or 0.4 × 20 or 0.1 × 20 or 4 + 8 + 2
	20 × '0.3' (<1)	M1 dep	20 – (4 + 8 + 2) or 20 – 14
	6	A1	

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