



## **General Certificate of Secondary Education**

# **Mathematics 4302**

## *Specification B*

**Module 1 Tier F 43001F TWO TIER**

# **Mark Scheme**

*2007 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:**

<b>M</b>	Method marks awarded for a correct method.
<b>A</b>	Accuracy marks awarded when following on from a correct method. It is not necessary always to see the method. This can be implied.
<b>B</b>	Marks awarded independent of method.
<b>M dep</b>	A method mark which is dependent on a previous method mark being awarded.
<b>ft</b>	Follow through marks. Marks awarded for correct working following a mistake in an earlier step.
<b>SC</b>	Special Case. Marks awarded for a common misinterpretation which has some mathematical worth.
<b>oe</b>	Or equivalent.
<b>eeoo</b>	Each error or omission.

**MODULE 1 FOUNDATION TIER**
**43001F**
**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)	14	B1	
1(b)	Thursday	B1	
1(c)	15 + '8'	M1	Allow error on reading 8
	23	A1	
1(d)	10 + 9 + 20 + 12 + 8	M1	Allow 1 error on 5 numbers
	59	A1	
1(e)	(No) On Wednesday there were more adults than children or On Wednesday there were 18 children and 20 adults	B1	Accept: Adults were more on one day/some days

2(a)	$\frac{45}{360}$ or $360 \div 45 (= 8)$	M1	$180^\circ = 60$ men
	$\frac{45}{360} \times 120$ or $120 \div "8"$	M1 dep	$90^\circ = 30$ men
	15	A1	$45^\circ = 15$ men
2(b)	Any one correct method seen or any one correct angle seen	M1	$\frac{360}{120} \times 42$ or $3 \times 42$ Can be one correct sector, labelled correctly
	126°, 105°, 75°, 30°, 24°	A1	4 or 5 correct angles
	All 5 angles drawn correctly $\pm 2^\circ$	A1	Must be only 5 sectors
	All 5 sectors labelled in correct order of size	B1	Must be only 5 sectors

3	$1 - (0.41 + 0.15 + 0.32)$ or $1 - 0.88$	M1	
	0.12	A1	oe

4	One correct midpoint seen <b>and used</b> correctly	M1	At least one product. Sight of 120, 500, 420 or 360 $\Rightarrow$ M1
	$(5 \times 2) + (15 \times 8) + (25 \times 20) + (35 \times 12) + (45 \times 8)$ or 1410	M1	$\sum fx$ using $x$ on or between the class boundaries. All five products
	"1410" $\div 50$	M1 dep	on 2nd M1
	28.2	A1	28 with correct working or no working $\Rightarrow$ M3A0 (unless 28.2 seen)

5(a)	4, 3, 6	B1	
5(b)	All three lines completed correctly (wed 2, thurs 1.5, fri 3)	B2	B1 two lines correct

6(a)	5, 6, 6, 7, 7, 7, 8, 9, 9, 9, 9, 10, 11	M1	Ordering at least 12 values or correct ordering from either end to the middle (7 values)
	8	A1	
6(b)	9	B1	
6(c)	The mode as they sell more of this size than the median	B1	Must tick or state mode <b>and</b> statement inferring more sold of this size

7	A at $\frac{3}{6}$	B1	3rd line
	B at $\frac{2}{6}$	B1	2nd line
	C at 1	B1	

8(a)	£3.50 or £3.60 or £0.10 seen	M1	350 or 360 not £350 or £360
	10	A1	10 from £4.20 – £4.10 MR $\Rightarrow$ M1A0
8(b)	Adult 5.05, 3.70 and Youth 4.25, 3.20 or Adult 1.35 and Youth 1.05 or 2005 difference of 80p and 2000 difference 50p or gap widening or Adult steeper	M1	£ or pence
	Adult	A1	<b>Must</b> give explanation

9(a)	Points plotted correctly ( $\pm \frac{1}{2}$ sq)	B2	5 or 6 correct B1 ignore extras
9(b)	“Straight” line at least from 2 to 8	B1	Below or on (2, 21) and above or on (8, 28) on the graph paper
9(c)	Correct reading from their line with positive gradient (may be curved or zig-zag)	B1 ft	Accept any value between or on the 2 integers either side of their correct reading
9(d)	Strong positive	B1	
9(e)	The line may change/there is no data near 15	B1	