



## General Certificate of Secondary Education

# Mathematics 3302

## *Specification B*

### *Module 3 Foundation Tier*

# Mark Scheme

## *2006 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.

**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 awarded.</b>	A method mark which is dependent on a previous method mark being awarded.
<b>ft an</b>	Follow through marks. Marks awarded for correct working following a mistake in 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 3 Foundation Tier**

<b>Q</b>	<b>Answers</b>	<b>Mark</b>	<b>Comments</b>
<b>1(a)</b>	46	B1	
<b>1(b)</b>	12	B1	
<b>1(c)</b>	87	B1	
<b>1(d)</b>	2	B1	
<b>2(a)</b>	700	B1	
<b>2(b)</b>	their $700 \times 0.06$	M1	Allow their $700 \times 6$
	42(.00)	A1	Do not accept 4200 (p) or 42.0 but either answer with no working implies M1  SC2 Answer 378 from part (a) 6300 or answer 210 from part (a) 3500
<b>3(a)(i)</b>	$7 \times 1.19$	M1	$7 \times 119$
	8.33	A1	Do not allow 833 (p) but this answer with no working implies M1
<b>3(a)(ii)</b>	10 – their 8.33 evaluated correctly (= 1.67 if correct)	B1ft	Allow 1000 (p) – their 833 (p) evaluated correctly
<b>3(b)</b>	£2    £1    20p    1p	B1	Any order
<b>4(a)</b>	5.8	B1	
<b>4(b)(i)</b>	1.7	B1	
<b>4(b)(ii)</b>	1.42	B1	
<b>4(b)(iii)</b>	1.35	B1	
<b>5(a)</b>	$292 \div 28$	M1	
	10	A1	
<b>5(b)</b>	12	B1	No ft

Q	Answers	Mark	Comments
6(a)	512	B1	
6(b)	0.4	B1	oe
6(c)	1053	B1	
7	$0.05 \times 1055$	M1	$10\% = 1055 \div 10$ (=105.5) <b>and</b> $(105.5) \div 2$
	52.75	A1	Do not accept 53 unless 52.75 seen 5275 with no working is M0
8(a)	$\frac{3}{4} \times 660$	M1	$660 - \frac{1}{4} \times 660$
	495	A1	
8(b)	$660 \div 10$ ( $\times 9$ )	M1	66 seen
	594	A1	Both 594 and 66 given is A0
9	$25 \times 1.76$ (= 44) <b>or</b> $25 \times 1.75$ (= 43.75)	M1	$8 \div 1.76$ (= 4.5...) <b>or</b> $8 \div 1.75$ (= 4.5... or 4.6)
	their 44 or 43.75 $\div 8$	M1dep	$25 \div$ their 4.5... or 4.6
	Answer in range 5.4 to 5.6 inclusive	A1	
10	Chooses to square any number between 0 and 1 exclusive	M1	eg, $0.5^2$ $0.2 \times 0.2$ $(\frac{1}{4})^2$
	Evaluates correctly (conclusion can be implied)	A1	Ignore any squaring of numbers that are not between 0 and 1 exclusive even if they mistakenly give a correct conclusion eg, ignore $-2 \times -2 = -4$
11(a)	3	B1	
11(b)(i)	30	B1	
11(b)(ii)	$\frac{1}{2}$	B1ft	oe <b>fraction</b> ft from their minutes in (i) if $< 60$

Q	Answers	Mark	Comments
12(a)	84	B1	
12(b)	6	B1	
12(c)	$\frac{25}{100} \times 32$	M1	oe
	8	A1	
13(a)	Attempt at 2006 - 1876	M1	Build up eg, 1876 to 1976 (=100) 1976 to 2006 (=30) (100) + (30)
	130	A1	SC1 Answer 30
13(b)	1900	B1	
13(c)	1678	B1	Allow in words
13(d)	700	B1	Allow in words Allow 100(s)
13(e)	80	B1	Allow in words Allow 10(s)
14	$30 - 12 (= 18)$	M1	
	their $18 \div 2$	M1dep	
	9	A1	
15(a)	0.8 0.786 0.09	B1	
15(b)	0.79	B1	Do not allow 0.790
15(c)	$3 \div 8$	M1	
	0.375	A1	Only allow rounded or truncated answers if 0.375 seen
15(d)	0.07	B1	oe

Q	Answers	Mark	Comments
16(a)	200	B2	25 or 8 seen is B1
16(b)	$\left(\frac{7}{8}\right) - \frac{4}{8}$	M1	If a different but appropriate common denominator is used at least one numerator must be correct on converting the two fractions. Allow 0.875 – 0.5 No % unless recovered
	$\frac{3}{8}$	A1	oe fraction Allow 0.375
17	$\frac{10}{100} \times (16.50 + 8.50) (= 2.50)$	M1	$\frac{10}{100} \times 16.50 (= 1.65)$ <b>and</b> $\frac{10}{100} \times 8.50 (= 0.85)$ worked out separately
	$(16.50 + 8.50) - \text{their } 2.5(0)$	M1dep	$16.50 - \text{their } 1.65 (= 14.85)$ <b>and</b> $8.50 - \text{their } 0.85 (= 7.65)$ $\frac{90}{100} \times (16.50 + 8.50)$ is M2 or $\frac{90}{100}$ of each worked out separately is M2
	22.50	A1	Do not accept 22.5 but M2 implied SC1 Answer 14.85 or 7.65

Q	Answers	Mark	Comments
<b>18(a)</b>	$\frac{300}{500} \times 100$	M1	Build up eg, 10(%) = $500 \div 10$ (=50) and $300 \div (50) \times 10$ or 20(%) = $500 \div 5$ (=100) and $300 \div (100) \times 20$ or 50(%) = 250 and 10(%) = 50 and $50 + 10$
	60	A1	
<b>18(b)</b>	$140 + \frac{1}{2} \times 140$	M1	$\frac{750}{500} \times 140$
	210	A1	