



ASSESSMENT and
QUALIFICATIONS
ALLIANCE

Mark scheme
November 2002

GCSE

Mathematics B (Modular)

Module 3: Foundation

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.
cao	Correct answer only.
SC	Special case. Marks awarded for a common misinterpretation which has some mathematical worth.

Foundation Tier

1(a)	Cost is $19 \times 69p$	M1	
	= £13.11	A1	
(b)	Change is $£20 - £13.11$	M1	
	= £6.89	A1	ft
(c)	This is one £5 note,	B1	
	£1,50p,20p,10p,5p, $2 \times 2p$ coins	B1	ft

2(a)	i) $-7^\circ C$	B1	
	ii) $14^\circ C$	B1	SC1 if (i) and (ii) reversed
(b)	$-3 - 8$	M1	
	= $-11^\circ C$	A1	

3(a)	74	B1	
(b)	73.8	B1	

4(a)	Seven hundred or 700	B1	
(b)	Twenty thousand or 20 000	B1	

5	Pay per hour $£4 \times 5$		
	= £20	B1	
	Pay per tea $30 \times 20p$		
	= £6	B1	
	Total £26	B1	

6	Potatoes cost $70p \times 1.2$	M1	
	= 84p	A1	
	\therefore carrots cost 12p		
	0.4 kg cost 12p		
	1 kg costs $\frac{12}{0.4}$	M1 dep	
	= 30p	A1	

7	Train leaves at 9.47 am		
	Arrives at 13.19	B1	
	Length of journey 13.19 – 09.47	M1	At least 1 time correct
	= 3 hours 32 minutes	A1	Accept 212 minutes 3.533 hours
		B1	(hours, minutes)
			SC3 2 hrs 12 min; SC3 212; SC2 2.12 SC3 3 hrs 72 min; SC2 3.72; SC1 372

8	Cost is £ $\frac{24.99}{1.47}$	M1	
	= £17.00	A1	

9	Increase is $\frac{4.3}{100} \times 185$	M1	Or $\frac{104.3}{100} \times 185$
	= 7.955	A1	Accept 7.96
	∴ Height is 193 cm	A1	

10	Total number of songs is 5		
	∴ Dan receives $\frac{1}{5} \times £80$	M1	
	= £16	A1	

11(a)	i) Number is 12×4	M1	
	= 48	A1	
	ii) 50	B1 ft	
(b)	Cost is £ $\frac{1.56}{12}$	M1	
	= 13p	A1	

12(a)	$375 + 82 + 419$		
	$= 876$	B2	(B1 for 76)
(b)	$500 - 327 = 173$	B2	(B1 for 73)
(c)	$15 + 3 \times 4 = 15 + 12$	B1	
	$= 27$	B1	
(d)	$\begin{array}{r} 374 \\ \times 85 \\ \hline 29920 \\ 1870 \\ \hline 31790 \end{array}$ OR $\begin{array}{r} 85 \\ \times 374 \\ \hline 340 \\ 5950 \\ \hline 25500 \\ 31790 \end{array}$	M1 A1	(method and 1 correct) OR Method and 1 line correct but <u>3</u> lines working (2 nd row) 2 nd and 3 rd row correct
			Alternative method:
			Napier's bones or equivalent
			ALL Correct boxes for multiplication and one total (or digit for Napier's bones) M1
			ALL totals correct for long multiplication A1 [Napier's bones at least 3 digits in the correct position]
			Total A1
(e)	$0.3 \times 0.2 = 0.06$	B1	

13	$97 \times 7.1 \approx 100 \times 7$ (or 7.1)	B1	
	≈ 700 (or 710)	B1	

14(a)	$\frac{1}{4} \times 400 = 100$	B1	Accept 300 under 60 Alternative method
	$\frac{1}{5} \times 400 = 80$	B1	$\frac{1}{5} + \frac{1}{4} = \frac{9}{20}$ B1 or 45%
	\therefore No not over 60 or under 10 $= 400 - 100 - 80$	M1	M1 (at least 1 correct) $1 - \frac{9}{20} = \frac{11}{20}$ B1 or 55%
	$= 220$	A1	No is $\frac{11}{20} \times 400 = 220$ M1 SC2 180 A1
(b)	$\% = \frac{240}{400} \times 100$	M1	
	$= 60\%$	A1	SC1 40%

15		B1	(any example, could be odd)
	$a = 8$ $a^2 = 64$ which is even	B1	As shown and is even
16(a)	$\frac{59 \times 192}{29} \approx \frac{60 \times 200}{30}$	B1	2 correct
	= 400	B1	
(b)	$\frac{3}{4} - \frac{2}{5} = \frac{15-8}{20}$	B1	(either)
	= $\frac{7}{20}$	B1	
17	Discount = $\text{£}4.80 \times \frac{1}{3}$ or $\frac{480}{3}$	M1	$\text{£}4.80 \times \frac{2}{3}$ M1
	= $\text{£}1.60$ or 160	A1	
	\therefore Price is $\text{£}3.20$	A1	