



## General Certificate of Secondary Education

# Mathematics 3302

## *Specification B*

*Module 3 Tier F 33003F*

# Mark Scheme

*2006 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.

**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 3 FOUNDATION TIER****33003F**

1(a)	7	B1	
1(b)	their (a) $\times$ 1.8(0)	M1	Allow their (a) $\times$ 180
	12.60	A1 ft	12.6 M1A0 Only ft if answer is in £ and has two digits for pence (if exact number of £ the pence digits may be omitted) Digits 126 implies M1

2(a)	20 000	B1	20.000 is B0
2(b)(i)	5600	B1	Allow words
2(b)(ii)	6000	B1	Allow words

3(a)	100	B1	Do not award if additional answers are given
3(b)	490	B1	

4(a)	$50 \div 6.35$	M1	$5000 \div 635$ Build up: attempt to add six, seven or eight lots of 6.35 <b>or</b> attempt at subtracting six, seven or eight lots of 6.35 from 50 <b>or</b> $10 \times 6.35 (= 63.50)$ then subtracts two, three or four lots of 6.35 from their 63.50
	7	A1	
4(b)	$77 \div 1.4$	M1	(€)14 = (£)10 (€)70 = (£)50 (€)7 = (£)5 <b>and</b> adds last two lines
	55	A1	

5	Sight of 0.5(kg) <b>or</b> 3750(g)	B1	or both
	$3.75 + 3 \times 0.5$ <b>or</b> $3750 + 3 \times 500$	M1	Attempt at sum of <u>four</u> parcels using the same unit for each parcel - allow use of 1 kg = 100 g ie allow $375 + 3 \times 500$ <b>or</b> $3.75 + 3 \times 5$
	5.25(0)	A1	5250 (grams) M1B1A0 SC1 Digits 1875

6	$\frac{2}{7} \times 1750$	M1	$\div 7$ then $\times 2$ <b>or</b> $\times 2$ then $\div 7$
	500	A1	SC1 Answer 1250

7(a)	0.6	B1	Allow 0.60
7(b)	$0.38 \times 146$	M1	$146 \div 100 \times 38$ Build up: eg 10% = 14.6(0) 30% = 43.8(0) 8% = 11.68 <b>and</b> adds last two lines
	55.48	A1	Digits 5548 implies M1
7(c)	$\frac{108}{150} \times 100$	M1	$108 \div 150 \times 100$ Build up: eg 10% = 15 70% = 105 2% = 3 <b>and</b> adds last two lines
	72	A1	SC1 Answer 28

8(a)	$2 \times 420$ <b>or</b> $3 \times 140$	M1	840 <b>or</b> 420
	$2 \times 420 + 3 \times 140$	M1 dep	Sum of correct two products but they can evaluate them incorrectly
	1260	A1	SC1 Answer 1470 1260 seen in working space with a different answer on answer line M2
8(b)	$1330 - 480 (= 850)$	M1	
	their $850 \div 170$	M1 dep	Adds four, five or six lots of 170 <b>or</b> Subtracts four, five or six lots of 170 from their 850  M2 for $480 +$ four, five or six lots of 170
	5	A1	Do not award if their 5 has clearly been rounded

9	$(77 - 32) \times 5 \div 9$ and attempt at full evaluation using brackets	M1	or 3 steps attempted separately
	25	A1	59(...) M0

10(a)	1.31696(...)	B1	
10(b)	1.3	B1 ft	ft their (a) if $> 1$ dp

11(a)	77 and 23	B1	Either order
11(b)	84 and 34	B1	Either order
11(c)	34	B1	

12	2:30 – 0:07	M1	Allow 30 – 7 Sight of 23 gets M1
	2:23 (pm)	A1	Allow words
	14:23	B1 ft	ft from any time seen as long as answer has hours > 12 SC1 Answer 14:37 14:23 pm is M1A1B0

13(a) (i)	$\frac{1}{10}$	B1	oe fraction
13(a) (ii)	10	B1 ft	ft from their (a)(i)
13(b)	$\frac{13}{100}$	B1	oe fraction

14(a)	1.28	B1	Do not accept 128(p)
14(b)	(£)5 – 5 × (£)0.85 <b>or</b> 500(p) – 5 × 85(p)	M1	Must subtract five lots of £0.85 or 85p if using count down method Allow [(£)1 – (£)0.85] × 5 <b>or</b> [100(p) – 85(p)] × 5
	0.75 <b>or</b> 75	A1	
	£ <b>or</b> pence	B1 ft	Units mark dependent on working seen <b>Note:</b> Answer only, in £ or p, that is < £5 scores B1

15(a)	2	B1	Allow Monday, Mon or M
15(b)	–7	B1	Allow $\bar{7}$ <b>Check the table if no answer in answer space</b>
15(c)	–3	B1	Allow $\bar{3}$ <b>Check the table if no answer in answer space</b>

16(a)	$\begin{array}{r} 456 \\ 346 \\ \underline{75} \\ \dots 7 \end{array}$	M1	Attempt at addition of the three numbers and obtains 7 in the units column
	877	A1	
16(b)	4.84	B1	
16(c)	$6 \times 6 \times 6$	M1	$36 \times 6$
	216	A1	
16(d)	$\frac{(15)}{20} (-) \frac{(4)}{20}$	M1	Common denominator of 20 <b>with 1 numerator correct</b> (or 40, 80 etc) Allow 0.75 – 0.2
	$\frac{11}{20}$	A1	oe fraction Allow 0.55

17	$\frac{10(\times)20}{8(-)3}$ <b>or</b> $\frac{10(\times)20.1}{8(-)3}$	M1	At least 2 values correct Allow $\frac{200}{5}$ <b>or</b> $\frac{201}{5}$ Any attempt to evaluate without rounding M0
	40 <b>or</b> 40.2	A1	
18(a) (i)	10:24	B1	Allow 10:24 am
18(a) (ii)	Attempts difference between 10:24 and 11:15 (eg build up)	M1	Can attempt difference between the other pairs of Crewe and Liverpool times
	51	A1	0:51(h) M1A0 91 is M0
18(b)	Train does not stop at Nuneaton Train does not stop there	B1	Train does not go to Nuneaton Train does not go there
19	$2 \times \frac{3}{4} \times 7$	M1	$2 \times 0.75 \times 7$
	$10\frac{1}{2}$	A1	oe
	11	B1 ft	ft from non-integer values only (must round to nearest integer above)
			SC2 $\frac{3}{4} \times 7$ or $5\frac{1}{4}$ Answer 6 (tins) SC2 $\frac{3}{4} \times 7$ or $5\frac{1}{4}$ 6 seen and answer 12 (tins)
			SC1 Answer 6 with no working SC1 $\frac{3}{4} \times 7 = 5\frac{1}{4}$
			SC3 $\frac{3}{4} \times 7$ or $5\frac{1}{4}$ Answer 12 (tins) <b>but only if fully explained</b> (eg that the cats eat different food)
			Answer of 14 (which assumes tins are thrown away if not used fully) scores no marks at all