OCR
RECOGNISING ACHIEVEMENT

GCSE

Mathematics C (Graduated Assessment)

General Certificate of Secondary Education

Unit **B273:** Module M3 (Sections A&B)

Mark Scheme for March 2011

Oxford Cambridge and RSA Examinations

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by Examiners. It does not indicate the details of the discussions which took place at an Examiners' meeting before marking commenced.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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Marking instructions for examiners (March 2011)

GCSE Mathematics C (Graduated Assessment) – J517
Units B272 to B280

1. Mark strictly to the mark scheme.

2. Make no deduction for omission of units except as indicated on the mark scheme (although if this leads to a later error this will of course be penalised).

3. Work crossed out but not replaced should be marked.

4. **M** (method) marks are not lost for purely numerical errors.
A (accuracy) marks depend on preceding M (method) marks. Therefore M0 A1 cannot be awarded.
W (workless) marks are independent of M (method) marks and are awarded for a correct final answer or a correct intermediate stage.

5. Subject to 4, two situations may be indicated on the mark scheme conditioning the award of A marks or independent marks:
   i. Correct answer correctly obtained (no symbol)
   ii. Follows correctly from a previous answer whether correct or not ("FT" on mark scheme and on the annotations tool).

6. As a general principle, if two or more methods are offered, mark only the method that leads to the answer on the answer line. If two (or more) answers are offered, mark the poorer (poorest).

7. Always mark the greatest number of significant figures seen, even if this is then rounded or truncated on the answer line, unless the question asks for a specific degree of accuracy.

8. i. Allow full marks if the correct answer is seen in the body and the answer given in the answer space is a clear transcription error, unless the mark scheme says 'mark final answer' or 'cao'.
   ii. Allow full marks if the answer is missing but the correct answer is seen in the body.
   iii. Accuracy marks for an answer are lost if the correct answer is seen in the working but a completely different answer is seen in the answer space. Method marks would normally be given.

9. When the data of a question is consistently misread in such a way as not to alter the nature or difficulty of the question, please follow the candidate's work and allow follow through for **A** and **W** marks. Deduct 1 mark from any **A** or **W** marks earned and record this by using the **MR** annotation. **M** marks are not deducted for misreads.

10. For methods not provided for in the mark scheme give as far as possible equivalent marks for equivalent work.

11. For answers scoring no marks, you must either award NR (no response) or 0, as follows:

    Award NR if:
    - Nothing is written at all in the answer space
    - There is a comment which does not in any way relate to the question being asked ("can't do", "don't know", etc.)
    - There is any sort of mark that is not an attempt at the question (a dash, a question mark, etc.)

    Award 0 if:
    - There is any attempt that earns no credit. This could, for example, include the candidate copying all or some of the question, or any working that does not earn any marks, whether crossed out or not.

12. Where a follow through (FT) mark is indicated on the mark scheme for a particular part question, you must ensure that you refer back to the answer of the previous part question

13. In cases where there is clear evidence that a calculator has been used in section A, mark the script as normal then raise an exception

14. Anything in the mark scheme which is in square brackets […] is not required for the mark to be earned, but if present it must be correct.

Abbreviations

The following abbreviations are commonly found in GCSE Mathematics mark schemes.

- Where you see **oe** in the mark scheme it means **or equivalent.**
- Where you see **cao** in the mark scheme it means **correct answer only.**
- Where you see **soi** in the mark scheme it means **seen or implied.**
- Where you see **www** in the mark scheme it means **without wrong working.**
- Where you see **rot** in the mark scheme it means **rounded or truncated.**
- Where you see **seen** in the mark scheme it means that you should award the mark if that number/expression is seen anywhere in the answer space, including on the answer line, even if it is not in the method leading to the final answer.
- Where you see **figs 237**, for example, this means any answer with only these digits. You should ignore leading or trailing zeros and any decimal point e.g. 237000, 2·37, 2·370, 0·00237 would be acceptable but 23070 or 2374 would not.

Section A

1		25 6	**2**	**W1** for each	

2		11 05 11 20	**3**	**M1** for 09 10 – 07 50 soi or 1(h) 20(m) seen
				or 09 45 – 07 50 soi or 1(h) 55(m) seen
				or 12 40 – 09 10 soi or 3(h) 30 (m) seen
				
				A1 for each correct answer
				
				ft an incorrect answer
					If **3** not awarded then
					2 for one correct answer
					
					if **0** awarded then
					if their '11 20' – 09 45 = 12 40 – their '11 05'
					(or their '11 05' – 09 45 = 12 40 – their '11 20')
					then award **2** marks
					(**except** if their answers are 09 45 and 12 40 which scores **0)**
					or
					SC1 for answers of *x* 05 and *x* 20

3	**(a)**	16	**1**		
	(b)	10·8	**1**		
	(c)	2·756	**1**		condone 2·75 (r 6)
	(d)	18	**2**	**M1** for 24 ÷ 4 soi or just 12 6 seen (not 3) or 24 × 3 soi or 72 seen	condone just 6 alone for **M1**
	(e)	24	**2**	**M1** for 80 ÷ 10 soi, 8 seen or figs 24	allow 24%

4	**(a)**	15	**1**	allow embedded answers	
	(b)	7	**1**	allow embedded answers	
	(c)	12	**1**	allow embedded answers	
5	**(a)**	$\frac{1}{200}$	**1**	accept the best answer if there is a choice	
	(b)	0	**1**	accept the best answer if there is a choice accept none or $\frac{0}{200}$	do not accept non-numerical statements like impossible and penalise the wrong form such as "out of" once only ratio answers will score **0** in both parts
6		(H=) 2 to 4 (m) and (L=) 6 to 12 (m)	**2**	**W1** for one of these answers or both answers in range but reversed	
7	**(a)**	28	**1**		
	(b)	500 or (0)·4 **and** **"**No" (400<500 oe)	**2**	accept any correct argument eg "No" and (0)·1 (or 100) more **W1** for 500 soi, (0)·4 or (0) ·1 seen **or** **SC1** No **and** 1000 soi	500 could be implied by 100 as a result of 500 – 400 or 100 more
8	**(a)**	12	**2**	**W1** for 3 (cm) soi the diagram may form part of the working	eg implied by 4 + 4 + 4
	(b)	1·5 oe	**1**		

Section A Total: 25

Section B

9		correct enlargement, any orientation	**2**	**W1** for 1 side correct	Use the overlay for the correct answer
10	**(a)**	(i) four correct bars	**2**	**W1** for three correct bars	Mark intention, condone bars not all same width, ignore the inside of the bars
		(ii) blue	**1**		
		(iii) less than half the doors are blue soi	**1**	accept any correct statement	
	(b)	(i) 5	**3**	**M1** for attempt to add at least seven numbers (or 45 seen) **M1** for **'**their total' ÷ 'their number of days(9)'	allow 40-50 seen for this mark allow 8 or 10 for 9
		(ii) 9	**1**	not 9 – 0	condone answer of ¯9
11	**(a)**	576	**1**		
	(b)	27	**1**		
	(c)	66	**1**		
	(d)	46	**1**		
12	**(a)**	correct ruled line	**2**	It must be ruled and drawn between 0 and 40 on the pound axis **W1** for two of the given points correctly plotted	all points allow ±1 mm and where there is no line and choice mark the best bar chart scores **0**
	(b)	(i) 29-31	**1**	if **0** scored in (a) then FT *their* ruled line	
		(ii) 32-35	**1**	if **0** scored in (a) then FT *their* ruled line	

13	**(a)**	160 isw	**2**	**M1** for 120 seen or 3 × 40 + 40 seen	
	(b)	255 isw	**2**	**M1** for 200 seen or 4×50+55 seen	
14	**(a)**	(View) 2	**1**		
	(b)	(View) 3	**1**		
	(c)	(View) 4	**1**		

Section B Total: 25

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