

Mathematics C (Graduated Assessment)

General Certificate of Secondary Education **B271**

Module M1 (Sections A&B)

Mark Scheme for June 2010

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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.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

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Marking instructions

1. Mark strictly to the mark scheme. If in doubt, consult your team leader using the messaging system within *scoris*, e-mail, or by telephone.
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. If in doubt, consult your team leader.
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.)


The hash key [#] on your keyboard will enter NR.

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 if this is not shown within the image zone. You may find it easier to mark follow through questions candidate-by-candidate rather than question-by-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 (malpractice) in *scoris*. All suspected malpractice should be flagged using exceptions.
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.
15. Holding the F2 key on your keyboard displays the annotations toolbar next to your cursor. The following annotations are available:

✓ and ✗

	Highlighter
BOD	Benefit of doubt
FT	Follows through
ISW	Ignore subsequent working (after correct answer obtained)
M0, M1, M2	Method mark awarded 0, 1, 2
A1	Accuracy mark awarded 1
W1, W2	Workless mark awarded 1, 2
SC	Special case
^	Omission
MR	Misread

These should be used whenever appropriate during your marking. **The A, M and W annotations must be used on your standardisation scripts for responses that are not awarded either 0 or full marks.** It is vital that you annotate these scripts to show how the marks have been awarded. It is not mandatory to use annotations for any other marking, though you may wish to use them in some circumstances.

16. The comments box will be used by the Principal Examiner to explain his or her marking of the practice scripts for your information. Please refer to these comments when checking your practice scripts. **Please do not type in the comments box yourself.** Any questions or comments you have for your team leader should be communicated using the *scoris* messaging system, e-mail, or by telephone.
17. As far as possible you should mark roughly equal numbers of RIGs from sections A and B. It is helpful to mark some in each section as you go, rather than marking all RIGs in one section, then all RIGs from the other.

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	(a)	(i) Yoho or 337	1	NAMBI
		(ii) Ural or 330	1	
	(b)	one thousand (and) five hundred (and) four or fifteen hundred and four	1	be liberal with spelling
	(c)	Correct	3	M1 for correct position of control block M2 for correct control block OR M1 for correct height or width
	(d)	20	1	
	(e)	(i) 28 to 32	2	M1 for 26 – 27 or 33 – 34 or for clear counting of squares with numbers
		(ii) NAMBI (might be anywhere on paper)	1	must have arrowhead or some way of giving direction
	(f)	80 4 to 6	1 1	condone repeats of “millions”
	(g)	(i) 25 (minutes)	1	
		(ii) 30 min or equivalent	1	half an hour
2	(a)	4	1	allow embedded or similar
	(b)	5	1	allow embedded or similar
	(c)	8	1	allow embedded or similar
3	(a)	20 or 30 etc	1	
	(b)	15 or 25 or 35 etc	1	
4	(a)	28	1	
	(b)	5	1	
	(c)	6	1	

5	(a)	Even(s) (chance)	1	
	(b)	Unlikely	1	
	(c)	Impossible	1	

Section A Total: 25

Section B

6		1/4 or equivalent fraction	1	allow fraction written in words be liberal with spelling
7		all five others with no repeats or errors	2	W1 for one omission; condone repeats or errors
8	(a)	4.75 www	3	M1 for 72 – 15 or 57 seen M1 for “÷ 12” or digits “475” seen OR SC1 for (£)5 seen
	(b)	74	1	
	(c)	3.5 to 4.0 35 to 40 cm mm	1 1	
	(d)	(i) 30 to 35	1	
		(ii) NAMBI	1	
9	(a)	(2, 2) (4, 2) (6, 2)	2	W1 for two correct
	(b)	(i) (8, 2)	1	
		(ii) adding 2 to the first number oe	1	condone if example given, or if no reference made to “first number”, but must be “direction” + “number”
10	(a)	(i) 1	1	allow repeat of “kg”
		(ii) 50 www	3	M2 for (£)25 OR M1 for evidence of adding at least 6 bars M1 for “a total” × (£)2 OR SC1 for 48 or 52 seen
	(b)	(£)16.15 or (£)15.60 <u>and</u> “no”	3	M2 for (£)16.15 or (£)15.60 Or M1 for evidence of correct weight of boxes (4 & 6) or (8 & 2) OR SC1 for No + (£)24.48
	(c)	£3.90 www	3	M2 for figs “39” seen or 7.50 – 3.60 seen Or M1 for 10 × 36 or 0.75 or 75 or 3.6 or 360 seen or evidence of division (repeated subtraction)

Section B Total: 25

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