OCR
Oxford Cambridge and RSA

GCSE

Mathematics A

Unit **A501/01**: Mathematics A (Foundation Tier) Paper 1

General Certificate of Secondary Education

Mark Scheme for June 2014

These are the annotations, (including abbreviations), including those used in scoris, which are used when marking

Annotation	Meaning
BP	Blank Page – this annotation **must** be used on all blank pages within an answer booklet (structured or unstructured) and on each page of an additional object where there is no candidate response.
✔	Correct
✘	Incorrect
BOD	Benefit of doubt
FT	Follow through
ISW	Ignore subsequent working (after correct answer obtained), provided method has been completed
M0	Method mark awarded 0
M1	Method mark awarded 1
M2	Method mark awarded 2
A1	Accuracy mark awarded 1
B1	Independent mark awarded 1
B2	Independent mark awarded 2
MR	Misread
SC	Special case
^	Omission sign

The **M**, **A, B**, etc 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.

Subject-Specific Marking Instructions

M marks are for <u>using a correct method</u> and are not lost for purely numerical errors.
A marks are for an <u>accurate</u> answer and depend on preceding **M** (method) marks. Therefore **M0 A1** cannot be awarded.
B marks are <u>independent</u> of **M** (method) marks and are for a correct final answer, a partially correct answer, or a correct intermediate stage.
SC marks are for <u>special cases</u> that are worthy of some credit.

Unless the answer and marks columns of the mark scheme specify **M** and **A** marks etc, or the mark scheme is 'banded', then if the correct answer is clearly given and is <u>not from wrong working</u> **full marks** should be awarded.

Do <u>not</u> award the marks if the answer was obtained from an incorrect method, ie incorrect working is seen <u>and</u> the correct answer clearly follows from it.

Where follow through (**FT**) is indicated in the mark scheme, marks can be awarded where the candidate's work follows correctly from a previous answer whether or not it was correct.

Figures or expressions that are being followed through are sometimes encompassed by single quotation marks after the word *their* for clarity, eg FT 180 × (*their* '37' + 16), or FT 300 − √(*their* '5^2 + 7^{2}'). Answers to part questions which are being followed through are indicated by eg FT 3 × *their* (a).

For questions with FT available you must ensure that you refer back to the relevant previous answer. You may find it easier to mark these questions candidate by candidate rather than question by question.

Where dependent (**dep**) marks are indicated in the mark scheme, you must check that the candidate has met all the criteria specified for the mark to be awarded.

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

- **figs 237**, for example, means any answer with only these digits. You should ignore leading or trailing zeros and any decimal point eg 237000, 2.37, 2.370, 0.00237 would be acceptable but 23070 or 2374 would not.
- **isw** means **ignore subsequent working** after correct answer obtained and applies as a default.
- **nfww** means **not from wrong working**.
- **oe** means **or equivalent**.

- **rot** means **rounded or truncated**.
- **seen** means that you should award the mark if that number/expression is seen anywhere in the answer space, including the answer line, even if it is not in the method leading to the final answer.
- **soi** means **seen or implied**.

In questions with no final answer line, make no deductions for wrong work after an acceptable answer (ie **isw**) unless the mark scheme says otherwise, indicated by the instruction 'mark final answer'.

In questions with a final answer line following working space,

(i)   if the correct answer is seen in the body of working and the answer given on the answer line is a clear transcription error allow full marks unless the mark scheme says 'mark final answer'. Place the annotation ✓ next to the correct answer.

(ii) if the correct answer is seen in the body of working but the answer line is blank, allow full marks. Place the annotation ✓ next to the correct answer.

(iii) if the correct answer is seen in the body of working but a completely different answer is seen on the answer line, then accuracy marks for the answer are lost. Method marks could still be awarded. Use the M0, M1, M2 annotations as appropriate and place the annotation ✗ next to the wrong answer.

In questions with a final answer line:

(i)   If one answer is provided on the answer line, mark the method that leads to that answer.

(ii) If more than one answer is provided on the answer line and there is a single method provided, award method marks only.

(iii) If more than one answer is provided on the answer line and there is more than one method provided, award zero marks for the question unless the candidate has clearly indicated which method is to be marked.

In questions with no final answer line:

(i)   If a single response is provided, mark as usual.

(ii) If more than one response is provided, award zero marks for the question unless the candidate has clearly indicated which response is to be marked.

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 **B** marks. Deduct 1 mark from any **A** or **B** marks earned and record this by using the MR annotation. **M** marks are not deducted for misreads.

Unless the question asks for an answer to a specific degree of accuracy, always mark at the greatest number of significant figures even if this is rounded or truncated on the answer line. For example, an answer in the mark scheme is 15.75, which is seen in the working. The candidate then rounds or truncates this to 15.8, 15 or 16 on the answer line. Allow full marks for the 15.75.

Ranges of answers given in the mark scheme are always inclusive.

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.

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.

Question			Answer	Marks	Part marks and guidance	
1			grams kilometres litres	3	**B1** each	Accept abbreviations
2	(a)		2 and 15	2	Mark final answer **M1** for a pair as final answer that either multiplies together to 30 or adds to 17	For M1, accept non-integers or negatives
	(b)		Two of 1, 4, 9	2	**B1** for at least one correct and no more than one wrong number stated	Allow 2 for all of 1, 4, 9
3	(a)		Ten thousand [and] seventy[-]nine [pounds/pence]	1		Condone intent for spelling if meaning clear
	(b)	(i)	542.80	1	Condone extra p	
		(ii)	9536.2[0]	2FT	Condone extra p **FT** from 10079 − *their* 542.80 **M1** for 10079 − *their* 542.80 soi	
4	(a)			1	seen anywhere in (a)	
	(b)		17 Add 2 [each time]	1 1	 Or 2n + 3 oe contradictory comments score 0	See appendix for exemplars
	(c)		203	1		

Question			Answer	Marks	Part marks and guidance	
5			Heart, 36 or 0.36, 108 or 1.08 Striped, 82 or 0.82, 164 or 1.64 Total 2.72 or Square, 25 or 0.25, 75 or 0.75 Striped, 82 or 0.82, 164 or 1.64 Total 2.39 or Square, 25 or 0.25, 75 or 0.75 Cord 1.1[0] or 110, 2.2[0] or 220 Total 2.95	6	**B5** for a correct combination with just wrong final total **or** for correct combination with one error or omission in any cost and all other values FT correctly Or **B4** for correct combination with two errors or omissions in costs and total FT Or **B3** for a correct calculation for combination giving total more than £3 OR **B1** for a correct cost for 3 buttons **B1** for a correct cost for 2m of edging Bad notation, e.g. 0.75<u>p</u>, lose 1 mark once	Accept eg £0.75p
6	(a)	(i)	$7a$	1	**0** for $7 \times a$ etc	Condone capitals, $a7$ etc throughout question
		(ii)	$5a^2$	1	**0** for $5 \times a^2$ etc	
	(b)	(i)	$[c =]$ 10	1		
		(ii)	$[f =]$ -3	1		
		(iii)	$[g =]$ 4	1	After 0+0+0 in (b), **SC1** for $10 - 3 = 7$ and $-3 + 5 = 2$ and $5 \times 4 = 20$	
	(c)		$j + 3$ oe	1	Condone Sam or $s = j + 3$, but no other letters	eg not $j = n + 3$
	(d)		0	2	**M1** for $3c = -12$ soi	eg implied by $3c = -12c$

Question			Answer	Marks	Part marks and guidance	
7			Completed triangle with all sides 6.5 cm and correct arcs seen	2	Tolerance 2 mm **B1** for completed triangle with two sides in tolerance with correct arcs **Or** for completed triangle with all sides 6.5 cm and no correct arcs	
8			Reading off 420 [ml]	B1		Allow full marks for earlier conversion of both 420 and 100 to pints and correct subsequent working
			Use of 1000 ml	M1	Implied by 480 or 580 or 900 or 54 nfww	
			0.75 × 568	M1	Implied by 426	
			480 and 426 and yes Or 54 and yes Or 946 and yes	B1	FT 900 − *their* reading for 480	If their reading > 474 conclusion is no
9	**(a)**	**(i)**		2	**B1** for 2 entries correct	
		(ii)	8	1		
	(b)		Another suitable category introduced	1	eg 'none' or 'other' or 'drums' or 'percussion' Not specific instruments, eg 'violin' Ignore irrelevant comments	See appendix for further examples
	(c)		Heights of all bars correct	1		Tolerance ± 1 mm
			Equal widths by eye	1		
			Correctly labelled bars	1	Accept eg shading with key After 0 + 0 + 0, **SC1** for eg vertical lines with correct heights and labels	

For question 9(a)(i):

	13	
		19
	71	61

Question			Answer	Marks	Part marks and guidance	
10	(a)	(i)	59	2	**M1** for '24 to 83' oe or for 83 − 24	
		(ii)	48	2	**M1** for 47 and/or 49 identified	eg ringed in table
	(b)		Midpts 25, 35, 45... seen or implied	M1	For 3 or more correct; need not be used	eg may be seen by table
			$f \times x$ attempted	M1	Sum seen or at least 3 products seen FT *their* 'midpoints'; *their* 'midpoints' need to be in the correct class eg correct products are 75, 245, 585, 330, 65	eg allow 2nd **M1** for use of endpoints not midpoints; 1300 implies first two Ms; working for 2nd **M1** may be by table First two **M1**s may be earned for correct work seen even if not then used in the final answer
			(*Their* sum of $f \times x$) ÷ 30 soi	M1	If correct: 1300 ÷ 30	May be earned even if their 'midpoints' are not in the correct class eg Midpoint used as 25 throughout earns **M0M0M1** (*their fx* = 75, 175, 325 etc then 750 ÷ 30)
			43.3(3...)	A1	Allow **A1** for 43 if correct method seen Allow **B4** for 43.3(3...) **SC2** for 38.3(3...) or for 48.3(3...)	 Common with Higher
11	(a)		16	2	**M1** for 24/3 or for 8 or for 8 × 3 = 24	Common with Higher

Question			Answer	Marks	Part marks and guidance	
	(b)		C 15 600 H 10 400	3	**B2** for one correct on answer line or for 15 600 and 10 400 seen Or **B1** for 15 600 or 10 400 seen Or **M1** for 26 000/ *their*(3 + 2) or for 5200 Condone answers reversed on answer line if clearly correct in body of script with correct person (treat as transfer error)	Common with Higher
12	**(a)**		30 to 32	2	**M1** for 6.1 to 6.3 or 61 to 63	Common with Higher
	(b)		312 to 314	1		Common with Higher
	(c)		Correct angle for bearing used, tolerance 2° Mark for C 3.2 cm from A, tolerance 2 mm	1 1	Accept line or evidence such as dot in correct direction from A; Or other evidence eg line from A 3.2 cm long If C not marked, allow 2nd mark for an arc centre A radius 3.2 cm drawn, tol 2mm; allow 2 marks for line in correct direction and correct arc centre A	Use overlay; if in doubt, use protractor or ruler (accept obtuse angle NAC from 145-149 inclusive) If just a dot, need to be convinced it is not just a fleck from scanning – may be implied by use in (b) Allow **MR** for B used instead of A – move overlay as required to check accuracy, using protractor or ruler if in doubt ie they can gain 1 mark if C is ft correct Common with Higher

APPENDIX

Exemplar responses for Q4(b)

Response	Mark
17… you keep adding 2	**2**
17… add 2 for 3 patterns	**2**
17… you need double the pattern number add 3	**2**
17… add 2	**2**
17… because all odd numbers and they go up by 2 each time	**2**
17… 7 + 7 + 3 = 17	**2**
17… you're adding a dot onto the second and third line each time	**2**
17… the number of dots are odd and go up in two's	**2**
15… keep adding 2	**1**
17… there is always 2 more dots than the pattern before $\times 2n + 1$	**1**
15… each time you add 2 dots	**1**
17… the rule is +2 each time and its $3n + 2$ is the rule	**1**
15… it would be 7 dots on top and bottom row which is 14 and the 1 dot on its own	**0**

Exemplar responses for Q9(b)

Response	Mark
They should ask do you play and add a box for none	**1**
Change keyboards to brass so there is more variety, have an "I don't play an instrument" box	**1**
They should of put an answer saying "I don't play one"	**1**
They could add a "none listed" box	**1**
I don't play instrument [ ] they have to tick a box	**1**
Could include people who don't play	**1 bod**
There could be more specific instruments such as guitars and cellos	**0**
Only 3 choices of instruments more should be given	**0**
Should be a multiple of choices of instruments	**0**
Woodwind	**0**
Ask them to write the instrument rather than tick a box – this would be more accurate	**0**
What instrument do you play?	**0**
Could make it a boy/girl questionnaire	**0**

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