



Functional Skills Level 2

MATHEMATICS

8362/1

Paper 1 Non-Calculator

Mark scheme

January 2020

Version: 1.0 Final

Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' 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.

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Glossary for Mark Schemes

GCSE examinations are marked in such a way as to award positive achievement wherever possible. Thus, for GCSE Mathematics papers, marks are awarded under various categories.

If a student uses a method which is not explicitly covered by the mark scheme the same principles of marking should be applied. Credit should be given to any valid methods. Examiners should seek advice from their senior examiner if in any doubt.

M	Method marks are awarded for a correct method which could lead to a correct answer.
A	Accuracy marks are awarded when following on from a correct method. It is not necessary to always see the method. This can be implied.
B	Marks awarded independent of method.
ft	Follow through marks. Marks awarded for correct working following a mistake in an earlier step.
SC	Special case. Marks awarded for a common misinterpretation which has some mathematical worth.
M dep	A method mark dependent on a previous method mark being awarded.
B dep	A mark that can only be awarded if a previous independent mark has been awarded.
oe	Or equivalent. Accept answers that are equivalent. eg accept 0.5 as well as $\frac{1}{2}$
[a, b]	Accept values between a and b inclusive.
[a, b)	Accept values $a \leq \text{value} < b$
3.14 ...	Accept answers which begin 3.14 eg 3.14, 3.142, 3.1416
Use of brackets	It is not necessary to see the bracketed work to award the marks.

Examiners should consistently apply the following principles

Diagrams

Diagrams that have working on them should be treated like normal responses. If a diagram has been written on but the correct response is within the answer space, the work within the answer space should be marked. Working on diagrams that contradicts work within the answer space is not to be considered as choice but as working, and is not, therefore, penalised.

Responses which appear to come from incorrect methods

Whenever there is doubt as to whether a student has used an incorrect method to obtain an answer, as a general principle, the benefit of doubt must be given to the student. In cases where there is no doubt that the answer has come from incorrect working then the student should be penalised.

Questions which ask students to show working

Instructions on marking will be given but usually marks are not awarded to students who show no working.

Questions which do not ask students to show working

As a general principle, a correct response is awarded full marks.

Misread or miscopy

Students often copy values from a question incorrectly. If the examiner thinks that the student has made a genuine misread, then only the accuracy marks (A or B marks), up to a maximum of 2 marks are penalised. The method marks can still be awarded.

Further work

Once the correct answer has been seen, further working may be ignored unless it goes on to contradict the correct answer.

Choice

When a choice of answers and/or methods is given, mark each attempt. If both methods are valid then M marks can be awarded but any incorrect answer or method would result in marks being lost.

Work not replaced

Erased or crossed out work that is still legible should be marked.

Work replaced

Erased or crossed out work that has been replaced is not awarded marks.

Premature approximation

Rounding off too early can lead to inaccuracy in the final answer. This should be penalised by 1 mark unless instructed otherwise.

Continental notation

Accept a comma used instead of a decimal point (for example, in measurements or currency), provided that it is clear to the examiner that the student intended it to be a decimal point.

Section A

Q	Answer	Mark	Comments
1	6	B1	
	Additional Guidance		

Q	Answer	Mark	Comments
2	-9, -6, -2, 1, 5, 7	B2	B1 one value omitted, but order correct or correct in descending order or one value misplaced, but other values in correct order, eg -9, -2, 1, 5, -6, 7
	Additional Guidance		
	Additional or repeated values		B0

Q	Answer	Mark	Comments
3	36	B1	
	Additional Guidance		

Q	Answer	Mark	Comments
4	$180 - (42 + 85)$	M1	oe
	53	A1	
	Additional Guidance		

Q	Answer	Mark	Comments
5	2^3 calculated before 4×2 and $4 \times$ their 8 calculated before the subtraction	M1	implied by $61 - 32$
	29	A1	
	Additional Guidance		
	$61 - 4 \times 5$ or 41		M1A0
	$61 - 4 \times 6$ or $61 - 4 \times 2 \times 3$ or 37		M1A0
	$2^3 = 8$ on its own		M0A0

Section B

Q	Answer	Mark	Comments	
6(a)	Plots remaining points correctly (3600, 96), (3400, 100), (3100, 99)	B1	± ½ small square ignore any additional points plotted	
	Draws an appropriate line of best fit	B1	for their points or the given points only intended single straight line of any length	
	Draws a vertical line from 4(000) to their line of best fit	M1	implied by a mark at the correct place on their line of best fit, which must extend to at least 4(000) horizontally, or by a mark on the vertical axis	
	Correct reading for their line of best fit	A1ft	± ½ small square their line of best fit must be decreasing throughout	
	beats per minute	B1		
	Additional Guidance			
	Any answer with no working on diagram can only score the final mark			
	Points plotted, but no line of best fit, can only score the first and final marks			
	No points plotted, but a line of best fit drawn, can score all but the first mark			
	For beats per minute allow abbreviations, eg bpm			

Q	Answer	Mark	Comments
6(b)	Alternative method 1		
	15×12 or 180 or 15×16 or 240 or 12×16 or 192	M1	
	$15 \times 12 \times 16$ or 2880	M1	$15 \times 12 \times 16$ scores M2
	70×0.4 or 28 Or 130×0.4 or 52 Or 70×130 or 9100	M1	oe eg $70 \div 10 \times 4$
	$70 \times 0.4 \times 130$ or 3640	M1	oe eg $70 \times 130 - 70 \times 0.6 \times 130$
	2880 or 3640	A1	
	their 3640 – their 2880 or 760	M1dep	oe dep on all previous M marks
	760 and Yes	A1	

Mark scheme and additional guidance continue on next page

6(b)	Alternative method 2		
	15 × 12 or 180 or 15 × 16 or 240 or 12 × 16 or 192	M1	
	15 × 12 × 16 or 2880	M1	15 × 12 × 16 scores M2
	70 × 0.4 or 28 Or 130 × 0.4 or 52 Or 70 × 130 or 9100	M1	oe eg 70 ÷ 10 × 4
	70 × 0.4 × 130 or 3640	M1	oe eg 70 × 130 - 70 × 0.6 × 130
	2880 or 3640	A1	
	their 3640 – 750 or 2890	M1dep	oe dep on 3 rd and 4 th method marks
	2890 and 2880 and Yes	A1	

Mark scheme and additional guidance continue on next page

6(b)	Alternative method 3		
	15 × 12 or 180 or 15 × 16 or 240 or 12 × 16 or 192	M1	
	15 × 12 × 16 or 2880	M1	15 × 12 × 16 scores M2
	70 × 0.4 or 28 or 130 × 0.4 or 52 or 70 × 130 or 9100	M1	oe eg 70 ÷ 10 × 4
	70 × 0.4 × 130 or 3640	M1	oe eg 70 × 130 - 70 × 0.6 × 130
	2880 or 3640	A1	
	their 2880 + 750 or 3630	M1dep	oe dep on 1 st and 2 nd method marks
	3630 and 3640 and Yes	A1	
	Additional Guidance		
	Using 24 months, eg in alt 1: 15×24×16 may gain up to M1 M0 M1 M1 A1 M0 A0		
	2880 gains M2 A1		
	3640 gains M2 A1		
	2880 and 3640 gain M2 M2 A1		