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# Functional Skills Level 2 MATHEMATICS

## 8362/1

Paper 1 Non-Calculator

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Mark scheme

June 2022

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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

Functional Skills examinations are marked in such a way as to award positive achievement wherever possible. Thus, for Functional Skills 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.

<b>M</b>	Method marks are awarded for a correct method which could lead to a correct answer.
<b>A</b>	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>B</b>	Marks awarded independent of method.
<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>M dep</b>	A method mark dependent on a previous method mark being awarded.
<b>B dep</b>	A mark that can only be awarded if a previous independent mark has been awarded.
<b>oe</b>	Or equivalent. Accept answers that are equivalent. eg accept 0.5 as well as $\frac{1}{2}$
<b>[a, b]</b>	Accept values between a and b inclusive.
<b>[a, b)</b>	Accept values $a \leq \text{value} < b$
<b>3.14...</b>	Accept answers which begin 3.14 eg 3.14, 3.142, 3.1416
<b>Use of brackets</b>	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.

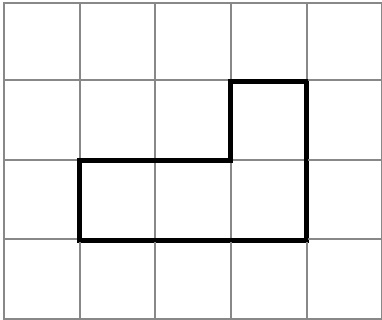
**Continental notation**

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	4.5 : 1	B1	

Q	Answer	Mark	Comments
2	Three million, four hundred (and) ninety thousand (and) two hundred	B1	
	<b>Additional Guidance</b>		
	Ignore incorrect spelling and punctuation		

Q	Answer	Mark	Comments	
3		B1	accept any orientation	
	<b>Additional Guidance</b>			
	Mark intention			
	Ignore internal lines			
	Do not accept a reflection			

Q	Answer	Mark	Comments
4	Multiplication of $0.013 \times 5$ attempted first or 0.065	M1	
	3.925	A1	
	<b>Additional Guidance</b>		
	eg $3.86 + 0.013 = 3.873$ , $3.873 \times 5 = 19.365$		M0A0

Q	Answer	Mark	Comments
5	<b>Alternative method 1</b>		
	$\frac{29}{9}$	M1	oe fraction
	Both fractions converted to a common denominator with at least one numerator correct or Two correct numerators for a common denominator	M1	eg $\frac{116}{36}$ and $\frac{117}{36}$ eg 116 and 117
	$\frac{116}{36}$ and $\frac{117}{36}$ and $\frac{13}{4}$ chosen 116 and 117 and $\frac{13}{4}$ chosen	A1	oe fractions with common denominator accept any indication for $\frac{13}{4}$ chosen

**Mark scheme and Additional guidance continue on the next page**

<b>5 cont.</b>	<b>Alternative method 2</b>		
	$(3)\frac{1}{4}$	M1	oe mixed number or fraction
	Both fraction parts converted to a common denominator with at least one numerator correct	M1	eg $(3)\frac{8}{36}$ and $(3)\frac{9}{36}$
	$(3)\frac{8}{36}$ and $(3)\frac{9}{36}$ and $\frac{13}{4}$ chosen or 8 and 9 and $\frac{13}{4}$ chosen with $3\frac{1}{4}$ or 3.25 seen	A1	oe fractions with common denominator accept any indication for $\frac{13}{4}$ chosen
	<b>Alternative method 3</b>		
	3.22... or 0.22... or 3.25 or 0.25	M1	one fraction converted to decimal correctly
	3.22... and 3.25 or 0.22... and 0.25	M1	both fractions converted to decimals correctly
	3.22... and 3.25 and $\frac{13}{4}$ chosen or 0.22... and 0.25 and $\frac{13}{4}$ chosen with $3\frac{1}{4}$ or 3.25 seen	A1	oe decimals accept any indication for $\frac{13}{4}$ chosen
	<b>Additional Guidance</b>		
	For the recurring decimal accept 3.22 or better with no incorrect digits		
	Eg 3.2 and 3.25 and $\frac{13}{4}$		M1M1A0
Answer $\frac{13}{4}$ only		M0M0A0	

**Section B**

Q	Answer	Mark	Comments		
6(a)	(7, 6)	B3	B2 correct point marked and one correct coordinate or $\left( \frac{1+13}{2}, \frac{10+2}{2} \right)$  B1 correct point marked or one correct coordinate or $\frac{1+13}{2}$ or $\frac{10+2}{2}$  SC2 (6, 7) with correct point marked SC1 (6, 7) with no point marked		
			<b>Additional Guidance</b>		
			Check diagram for working		
			(7, 6) on answer line	B3	



Q	Answer	Mark	Comments
<b>6(b)</b>	<b>Alternative method 1</b>		
	(mean =) $\frac{10.15 + 8.35 + 7.8 + 12.1}{4}$	M1	oe eg $\frac{38.4}{4}$
	9.6	A1	
	correct comment for their 9.6	B1ft	ft their 9.6 which must be from a correct method for the mean or the median
	(range =) 12.1 – 7.8 or 4.3	M1	could be implied eg 0.5 second difference
	4.3 and correct comment	A1	
	<b>Alternative method 2</b>		
	9.3 × 4 or 37.2	M1	
	(totals are) 37.2 and 38.4	A1	
	correct comment for their 37.2 and their 38.4	B1ft	ft their 37.2 and their 38.4
	(range =) 12.1 – 7.8 or 4.3	M1	could be implied eg 0.5 second difference
	4.3 and correct comment	A1	
	<b>Additional Guidance</b>		
	Comments on range and mean must be in context Eg 9.6 and Q has higher mean 9.6 and Q is slower 9.6 and Q takes more time 9.6 and P is 0.3 seconds faster 4.3 and Q has a bigger range 4.3 and Q times are more spread out 4.3 and P is more consistent		M1A1B0 M1A1B1ft M1A1B1ft M1A1B1ft M1A0 M1A1 M1A1
	(8.35 + 10.15) ÷ 2 or 9.25 must be seen for median to be used for comparison		
	10.15 + 8.35 + 7.8 + 12.1 ÷ 4 scores M0A0 (unless recovered) but is sufficient to show method for mean for comparison so may score B1ft		
	Ignore subsequent working for difference in range once 4.3 seen		

Q	Answer	Mark	Comments
6(c)	<b>Alternative method 1</b>		
	$8 \times 3.5$ or 28	M1	oe
	$10 \times 3$ or 30	M1	
	5.6(0) $\div$ (8 $\times$ 3.5) or 0.2(0) or 6.30 $\div$ (10 $\times$ 3) or 0.21	M1	oe
	0.2(0) and 0.21 and Pack A	A1	
	<b>Alternative method 2</b>		
	5.6(0) $\div$ 8 or 0.7(0)	M1	
	6.3(0) $\div$ 10 or 0.63	M1	
	(5.6(0) $\div$ 8) $\div$ 3.5 or 0.2(0) or (6.3(0) $\div$ 10) $\div$ 3 or 0.21	M1	oe
	0.2(0) and 0.21 and Pack A	A1	
	<b>Alternative method 3</b>		
	5.6(0) $\div$ 8 or 0.7(0)	M1	
	their 0.7(0) $\div$ 3.5 or 0.2(0)	M1dep	
	their 0.2(0) $\times$ 10 $\times$ 3 or 6(.00)	M1dep	
	6(.00) and Pack A	A1	
	<b>Alternative method 4</b>		
	6.3(0) $\div$ 10 or 0.63	M1	
	their 0.63 $\div$ 3 or 0.21	M1dep	
	their 0.21 $\times$ 8 $\times$ 3.5 or 5.88	M1dep	
	5.88 and Pack A	A1	

Additional guidance continues on the next page

		<b>Additional Guidance</b>	
<b>6(c) cont.</b>			
	Allow working in pence		
	Allow working in minutes		
	Answer A with no working		M0M0M0A0
	Use the alt that favours the student		
	Award up to M2 even if not used		
	0.7 must not come from incorrect working to be awarded M1 eg $6.30 - 5.60 = 0.7$		M0
In alt 2 allow a correct method to compare equal quantities of batteries from pack A and pack B for first M2 eg $5.6(0) \div 4$ and $6.3(0) \div 5$ or $1.4(0)$ and $1.26$ or $5.6(0) \times 10$ and $6.3(0) \times 8$ or $56(.00)$ and $50.4(0)$ or $5.6(0) \div 8 \times 10$ or $7(.00)$ or $6.3(0) \div 5 \times 4$ or $5.04$			