

Functional Skills Level 2
MATHEMATICS
8362/2

Paper 2 Calculator

Mark scheme

March 2023

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.

Further copies of this mark scheme are available from aqa.org.uk

Copyright information

AQA retains the copyright on all its publications. However, registered schools/colleges for AQA are permitted to copy material from this booklet for their own internal use, with the following important exception: AQA cannot give permission to schools/colleges to photocopy any material that is acknowledged to a third party even for internal use within the centre.

Copyright © 2023 AQA and its licensors. All rights reserved.

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.

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	2.41	B1	

Q	Answer	Mark	Comments
2	2 408 000	B1	
	Additional Guidance		
	Ignore punctuation		

Q	Answer	Mark	Comments
3	5 : 8	B2	B1 for an equivalent ratio that is not fully simplified eg 15 : 24 or 0.625 : 1 or 1 : 1.6
	Additional Guidance		
	Equivalent ratio eg 75 : 120, 50 : 80, 30 : 48, 25 : 40, 15 : 24, 10 : 16		B1
	A correct simplified ratio written the correct way round but without the colon eg 5 8 50 80		B1 B1
	A correct simplified ratio from 150 : 240 followed by an incorrect simplification eg 75 : 120, 5 : 12 15 : 24, 1.5 : 2.4		B1 B1
	An incorrect simplified ratio from 150 : 240 followed by a correct simplification eg 50 : 120, 5 : 12		B0
	1.5 : 2.4 with no correct simplification		B0

Q	Answer	Mark	Comments	
4	Cube of side 3 cm correctly drawn on isometric paper	B2	B1 cuboid with 3 cm square face correctly drawn on isometric paper or any size cube correctly drawn on isometric paper	
	Additional Guidance			
	Ignore any internal lines drawn			
	Ignore shading			
	Mark intention			
Correctly drawn on isometric paper means there should be no horizontal lines and no right angles between edges				

Q	Answer	Mark	Comments						
5	<table border="1"> <thead> <tr> <th>Percentage</th> <th>Decimal</th> <th>Fraction</th> </tr> </thead> <tbody> <tr> <td>3%</td> <td>(0).03</td> <td>$\frac{3}{100}$</td> </tr> </tbody> </table>	Percentage	Decimal	Fraction	3%	(0).03	$\frac{3}{100}$	B2	B1 (0).03 in correct place in table or $\frac{3}{100}$ in correct place in table or
	Percentage	Decimal	Fraction						
	3%	(0).03	$\frac{3}{100}$						
	<table border="1"> <thead> <tr> <th>Percentage</th> <th>Decimal</th> <th>Fraction</th> </tr> </thead> <tbody> <tr> <td>3%</td> <td>$\frac{3}{100}$</td> <td>(0).03</td> </tr> </tbody> </table>	Percentage	Decimal	Fraction	3%	$\frac{3}{100}$	(0).03		
Percentage	Decimal	Fraction							
3%	$\frac{3}{100}$	(0).03							
Additional Guidance									
Ignore any incorrect simplification after correct fraction seen									

Q	Answer	Mark	Comments
6	$59.5 \div 17$	M1	
	3.5 or $3\frac{1}{2}$	A1	oe

Q	Answer	Mark	Comments
7	$\left(\frac{1}{4} = \right) \frac{2}{8}$ or converts both fractions to a common denominator with at least one numerator correct or $\frac{9}{8}$ or 1.125	M1	eg $\frac{28}{32}$ and $\frac{8}{32}$ oe improper fraction eg $\frac{18}{16}$ or $\frac{27}{24}$ or $\frac{36}{32}$
	$1\frac{1}{8}$	A1	oe mixed number eg $1\frac{4}{32}$

Section B

Q	Answer	Mark	Comments
8 (a)	Alternative method 1		
	$55 \div (7 + 4)$ or $55 \div 11$ or 5	M1	oe
	7 × their 5 or 35 or 4 × their 5 or 20	M1dep	
	7 × their 5 × 16.2 or 35 × 16.2 or 567 or 4 × their 5 × 5.8 or 20 × 5.8 or 116	M1dep	oe
	7 × their 5 × 16.2 + 4 × their 5 × 5.8 or 567 + 116	M1dep	oe
	683	A1	
	Alternative method 2		
	$55 \div (7 + 4)$ or $55 \div 11$ or 5	M1	oe
	7 × 16.2 or 113.4 or 4 × 5.8 or 23.2	M1	
	7 × 16.2 + 4 × 5.8 or 113.4 + 23.2 or 136.6	M1dep	dep on previous M1
	their 5 × their 136.6	M1dep	dep on M3
	683	A1	

Mark scheme and additional guidance continue on next page

Q	Answer	Mark	Comments
8 (a) cont'd	Alternative method 3		
	$55 \div (7 + 4)$ or $55 \div 11$ or 5	M1	oe
	7 × 16.2 or 113.4 or 4 × 5.8 or 23.2	M1	
	their 5 × 7 × 16.2 or their 5 × 113.4 or 567 or their 5 × 4 × 5.8 or their 5 × 23.2 or 116	M1dep	oe dep on M2
	their 5 × 7 × 16.2 + their 5 × 4 × 5.8 or 567 + 116	M1dep	oe
	683	A1	
	Additional Guidance		
	Up to M3 may be awarded for correct work, with no answer, or incorrect answer, even if this is seen amongst multiple attempts		

Q	Answer	Mark	Comments
8 (b)	Alternative method 1		
	1 – 0.3 or 0.7	M1	oe eg 100 – 30 or 70(%)
	84 ÷ their 0.7 or 120	M1dep	oe eg 84 ÷ 70 × 100 or 84 ÷ 7 × 10
	their 120 – 84 or their 120 × 0.3	M1	oe their 120 must be greater than 84
	36	A1	
	Alternative method 2		
	(100 – 30) ÷ 10 or 7	M1	oe
	84 ÷ their 7 or 12	M1dep	oe eg 10% = 12
	their 12 × 3	M1dep	oe
	36	A1	
	Additional Guidance		
	In alt 2 allow a correct method for working with a percentage other than 10% eg 100 – 30 = 70%, 84 ÷ 70 = 1.2, 1.2 × 30 = 36		M1M1M1A1
	25.20 or 58.80 or 109.20		M0M0M0A0

Q	Answer	Mark	Comments																
8 (c)	180 – 59 or 121 or 180 – 70 or 110	M1	may be seen in the table (Adults total =) 121 or (5 km total =) 110																
	(Adult 5 km =) 97	A1	implied by 0.538... or 0.539 or 0.54																
	$\frac{\text{their 97}}{180}$ or 0.538... or 0.539 or 0.54 or 0.55×180 or 99	M1	oe their 97 must be their Adult 5 km and must be less than 180 accept 0.53 with 97 seen																
	0.538... and Yes or 0.539 and Yes or 0.54 and Yes or 97 and 99 and Yes	A1ft	oe percentages or two fractions with common denominator ft their 97 accept 0.53 with 97 seen																
	Additional Guidance																		
<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Child</th> <th>Adult</th> <th>Total</th> </tr> </thead> <tbody> <tr> <th>3 km</th> <td style="text-align: center;">46</td> <td style="text-align: center;">24</td> <td style="text-align: center;">70</td> </tr> <tr> <th>5 km</th> <td style="text-align: center;">13</td> <td style="text-align: center;">97</td> <td style="text-align: center;">110</td> </tr> <tr> <th>Total</th> <td style="text-align: center;">59</td> <td style="text-align: center;">121</td> <td style="text-align: center;">180</td> </tr> </tbody> </table>				Child	Adult	Total	3 km	46	24	70	5 km	13	97	110	Total	59	121	180	
	Child	Adult	Total																
3 km	46	24	70																
5 km	13	97	110																
Total	59	121	180																

Q	Answer	Mark	Comments
9 (a)	525, 575, 625, 675	B1	correct midpoints, allow one error
	their $525 \times 5 +$ their $575 \times 6 +$ their $625 \times 7 +$ their 675×2 or $2625 + 3450 + 4375 + 1350$ or 11 800	M1	correct midpoints, allow one error or their midpoints can be on or between the class boundaries
	their $11\,800 \div 20$ or 590	M1	their 11 800 must be the sum of their 4 midpoints \times frequency
	637 – their 590	M1dep	dep on previous M1 their 590 must be less than 637
	47	A1	
	Additional Guidance		
	Up to M2 may be awarded for correct work, with no answer, or incorrect answer, even if this is seen amongst multiple attempts		
	525.5, 575.5, 625.5, 675.5 $2627.5 + 3453 + 4378.5 + 1351 = 11\,810$, $11\,810 \div 20 = 590.50$, 46.50		B1 M1M1M1A1

Q	Answer	Mark	Comments
9 (b)	Alternative method 1		
	18 000 – 13 200 or 4800	M1	implied by 200
	their 4800 ÷ 24 or 200	M1	oe their 4800 must be less than or equal to 18 000
	$\frac{\text{their 200}}{1600} (\times 100)$ or $0.125 (\times 100)$ or $\frac{1}{8}$ or 1600×0.12 or 192 and 1600×0.13 or 208	M1dep	oe dep on previous M1
	12.5	A1	allow 13 with M3 scored
	Alternative method 2		
	18 000 – 13 200 or 4800	M1	
	1600 × 24 or 38 400	M1	oe
	$\frac{\text{their 4800}}{\text{their 38 400}} (\times 100)$ or $0.125 (\times 100)$ or $\frac{1}{8}$ or $38 400 \times 0.12$ or 4608 and $38 400 \times 0.13$ or 4992	M1dep	oe dep on previous M1 their 4800 must be less than or equal to 18 000
	12.5	A1	allow 13 with M3 scored

Mark scheme and additional guidance continue on next page

Q	Answer	Mark	Comments
9 (b) cont'd	Alternative method 3		
	18 000 – 13 200 or 4800	M1	implied by 3
	their 4800 ÷ 1600 or 3	M1	oe their 4800 must be less than or equal to 18 000
	their $\frac{3}{24}$ ($\times 100$) or 0.125 ($\times 100$) or $\frac{1}{8}$ or 24 \times 0.12 or 2.88 and 24 \times 0.13 or 3.12	M1dep	oe dep on previous M1
	12.5	A1	allow 13 with M3 scored
	Additional Guidance		
	Up to M2 may be awarded for correct work, with no answer, or incorrect answer, even if this is seen amongst multiple attempts		
	18 000 – 13 200 may be embedded		
	18 000 – 13 200 – 1600 – 1600 – 1600		M1M1
	18 000 – 1600 \times 3 = 13 200		M1M1
18 000 ÷ 24 = 750, $\frac{750}{1600} = 0.47 = 47\%$		M0M1M1A0	

Q	Answer	Mark	Comments
9 (c)	Alternative method 1		
	7	B1	may be implied
	their $7 \times 13.5(0)$ or $3 \times 13.5(0) + 4 \times 13.5(0)$ or $94.5(0)$	M1	oe their 7 can be 6, 8, 9 or 19 or the sum of 2 integer time periods
	$\frac{1}{5} \times$ their $94.5(0)$ or $18.9(0)$	M1	oe
	their $94.5(0) -$ their $18.9(0)$ or 75.6	M1dep	oe dep on previous M1 $\frac{4}{5} \times$ their $94.5(0)$ oe M2
	75.60	A1ft	correct money notation ft from their 7, their 7 can be 6, 8, 9 or 19 or the sum of 2 integer time periods
	Alternative method 2		
	7	B1	may be implied
	$\frac{1}{5} \times 13.5(0)$ or $2.7(0)$	M1	oe
	$13.5(0) -$ their $2.7(0)$ or $10.8(0)$	M1dep	oe dep on previous M1 $\frac{4}{5} \times 13.5(0)$ oe M2
	their $7 \times$ their $10.8(0)$ or $3 \times$ their $10.8(0) + 4 \times$ their $10.8(0)$ or 75.6	M1	oe their 7 can be 6, 8, 9 or 19 or the sum of 2 integer time periods their $10.8(0)$ must be less than 13.50
	75.60	A1ft	correct money notation ft from their 7, their 7 can be 6, 8, 9 or 19 or the sum of 2 integer time periods

Additional guidance continues on next page

Additional Guidance				
9 (c) cont'd	Hours worked	hours × 13.5(0)	$\frac{1}{5} \times \text{total}$	ft answer
	3	40.5(0)	8.1(0)	32.40
	4	54	10.8(0)	43.20
	6	81	16.2(0)	64.80
	8	108	21.6(0)	86.40
	9	121.5(0)	24.3(0)	97.20
	19	256.5(0)	51.3(0)	205.20

Q	Answer	Mark	Comments
10 (a)	Square of side length 6 cm	B3	B2 a shape with area of 36 cm^2 or 9 and 6 seen B1 a square with side length less than or equal to 10 cm or $\sqrt{81}$ or 9 seen
	Any rectilinear shape drawn in the north west corner	B1	less than or equal to 1 cm of top and left edges of grid
	Additional Guidance		
	Mark intention		

Q	Answer	Mark	Comments
10 (b)	50 or 3 or 30	M1	
	$50 \times 3 \times 30$ or $50 \times 3 \times 4 \times 7$	M1dep	allow use of 28, 29, 30 or 31 for 30
	4500 with 50 and 3 seen or 4200 with 50 and 3 seen	A1	
	Additional Guidance		
	$50 \times 3 \times 31$		M1M1A0
	$48 \times 3 \times 30$		M1M0A0
	$48 \times 3.21 \times 30$		M1M0A0
	$48 \times 3.21 \times 28$		M0M0A0
	$48 \times 3.21 \times 29$ or 4468.21 rounded to 4500		M0M0A0

Q	Answer	Mark	Comments
10 (c)	Alternative method 1		
	$\pi \times 5 \times 5 (\times 2)$ or 25π or [78.5, 78.6] or 50π or [157, 157.2]	M1	oe
	$\pi \times 5 \times 2 \times 1.8$ or 18π or [56.5, 56.6]	M1	oe
	2 × their 25π + their 18π or their 50π + their 18π or 2 × their [78.5, 78.6] + their [56.5, 56.6] or their [157, 157.2] + their [56.5, 56.6]	M1dep	oe dep on M2
	[213, 214] or 68π	A1	
	$\frac{3}{4}$ × their [213, 214] or [159, 161] or 51π	M1	oe their [213,214] cannot be 153
	[159, 161] and Yes	A1ft	ft their [213, 214] or their 68π which must be > 153

Mark scheme continues on next page

Q	Answer	Mark	Comments
10 (c) cont'd	Alternative method 2		
	$\pi \times 5 \times 5 (\times 2)$ or 25π or [78.5, 78.6] or 50π or [157, 157.2]	M1	oe
	$\pi \times 5 \times 2 \times 1.8$ or 18π or [56.5, 56.6]	M1	oe
	2 × their 25π + their 18π or their 50π + their 18π or 2 × their [78.5, 78.6] + their [56.5, 56.6] or their [157, 157.2] + their [56.5, 56.6]	M1dep	oe dep on M2
	[213, 214] or 68π	A1	
	$\frac{153}{\text{their [213,214]}} (\times 100)$ or [0.71, 0.72] or [71, 72](%)	M1	their [213,214] cannot be 153
	[0.71, 0.72] and Yes or [71, 72](%) and Yes	A1ft	ft their [213, 214] or their 68π which must be > 153

Mark scheme and additional guidance continue on next page

Q	Answer	Mark	Comments
10 (c) cont'd	Alternative method 3		
	$\pi \times 5 \times 5 (\times 2)$ or 25π or [78.5, 78.6] or 50π or [157, 157.2]	M1	oe
	$\pi \times 5 \times 2 \times 1.8$ or 18π or [56.5, 56.6]	M1	oe
	2 × their 25π + their 18π or their 50π + their 18π or 2 × their [78.5, 78.6] + their [56.5, 56.6] or their [157, 157.2] + their [56.5, 56.6]	M1dep	oe dep on M2
	[213, 214] or 68π	A1	
	$153 \times \frac{4}{3}$ or 204	M1	oe
	204 and [213, 214] and Yes	A1ft	ft their [213, 214] or their 68π which must be > 153
	Additional Guidance		
	$\pi \times 5 \times 5 \times 1.8 = 141.4$, $141.4 \div 4 \times 3 = 106.05$ and No		M1M0M0A0 M1A0ft

Q	Answer	Mark	Comments	
11 (a)	Plots (11, 150) and (16, 190) correctly	B1	$\pm \frac{1}{2}$ a small square ignore any additional points plotted	
	Appropriate line of best fit passing through (2, [40, 80]) and (18, [170, 240])	B1	for the 10 or 12 points intended single straight line	
	Draws a vertical line from 14 to their line of best fit	M1	implied by mark at the correct place on their line of best fit or on the vertical axis or the correct reading from their line of best fit their line of best fit must be increasing throughout and go from at least 12 to 16 horizontally allow a curve or dotted line but not zig-zags	
	Correct reading from their line of best fit	A1ft	$\pm \frac{1}{2}$ a small square ft their line of best fit which must be increasing throughout allow a curve or dotted line but not zig-zags	
	miles	B1		
	Additional Guidance			
	If no line of best fit of any sort is drawn then the only marks available are the B1 for plotting the 2 extra points and the B1 for the units.			
No points are plotted, but a line of best fit drawn can score all but the first mark				

Q	Answer	Mark	Comments
11 (b)	1.5×4.2 or $6.3(0)$ or 0.04×85 or $3.4(0)$	M1	oe
	$1.5 \times 4.2 + 0.04 \times 85$ calculated in the correct order or $6.3(0) + 3.4(0)$ or $9.7(0)$	M1dep	oe
	$9.7(0)$ and Yes	A1	oe eg 30p under
	Additional Guidance		
	Ignore any attempt to find the difference after $9.7(0)$ seen		
	$1.5 \times 4.2 + 0.04 \times 85$, $6.3 + 0.04 = 6.34$, $6.34 \times 85 = 538.9$		M1M0A0