Functional Skills Level 1
MATHEMATICS
8361/2

Paper 2 Calculator

Mark scheme

November 2021

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

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 ≤ 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.
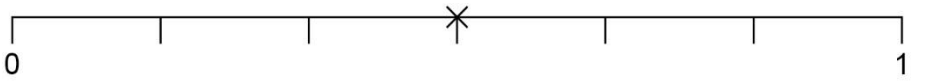
Premature approximation

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.
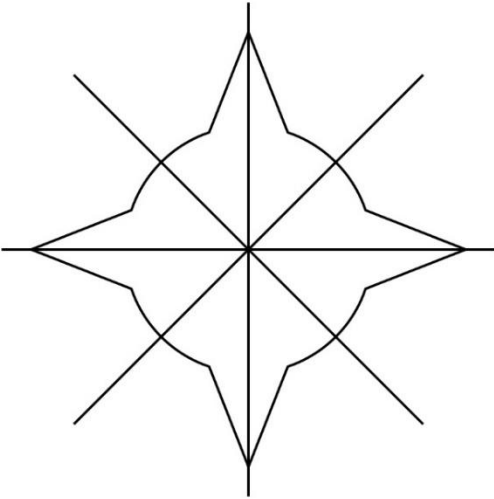
Section A

Q	Answer	Mark	Comments
1	32 089	B1	

Q	Answer	Mark	Comments
2	Mark at 0.5	B1	mark intention to indicate 0.5
	Additional Guidance		
		B1	

Q	Answer	Mark	Comments
3	–8, –5, –2, –1, 0, 2, 3	B2	B1 for reverse order B1 one error or omission eg –8, –5, –2, –1, 0, 3
	Additional Guidance		
	One number in the wrong place eg –8, –5, –1, –2, 0, 2, 3	B1	

Q	Answer	Mark	Comments
4	[158, 162]	B1	

Q	Answer	Mark	Comments
5		B2	mark intention B1 2 correct lines with no incorrect lines or 3 correct lines with 0 or 1 incorrect lines or 4 correct lines with 1 or 2 incorrect lines

Q	Answer	Mark	Comments	
6	0.15 × 180 or 27 or 0.2(0) × 120 or 24	M1	oe implied by 153 or 96	
	27 and 24 and 20% of 120	A2	A1 27 and 24 A1ft correct decision for their values with one value correct must have two values to compare	
	Additional Guidance			
	Decision may be indicated by circling the phrase in the question			
	Allow 24 chosen if 27 is also seen eg 0.15 × 180 or 27 0.2(0) × 120 or 24 so 24			M1A2
	27 and 24 both seen but then subtracted to give 153 and 96 and 20% of 120 chosen-treat as further work			M1A2

Q	Answer	Mark	Comments
7	46	B2	B1 58 and 12 selected

Section B

Q	Answer	Mark	Comments
8(a)	**Alternative method 1**		
	All four frequencies correct 15, 7, 23, 11 or 56 with no incorrect frequencies seen	B2	B1 at least one correct frequency
	their 15 ÷ their 56 or their 56 ÷ their 15	M1	oe their 56 must be an attempt at the sum of their four frequencies
	0.26(…) or 0.27 and Yes or 3.73(..) and Yes	A2ft	oe correct comparison ft their frequencies A1ft 0.26(…) or 0.27 or 3.73(..) or correct decision for their value with M1 awarded
	Alternative method 2		
	All four frequencies correct 15, 7, 23, 11 or 56 with no incorrect frequencies seen	B2	B1 at least one correct frequency
	their 56 ÷ 4 or 14	M1	their 56 must be an attempt at the sum of their four frequencies
	14 and 15 and Yes	A2ft	ft their frequencies A1ft 14 and 15 or correct decision for their values with M1 awarded

Mark scheme and Additional Guidance continue on the next page

Q	Answer	Mark	Comments
8(a) cont	**Alternative method 3**		
	All four frequencies correct 15, 7, 23, 11 or 56 with no incorrect frequencies seen	B2	B1 at least one correct frequency
	their 15 × 4 or 60	M1	
	60 and 56 and Yes	A2ft	ft their frequencies A1ft 60 and 56 or correct decision for their values with M1 awarded
	Additional Guidance		
	Only give B2 for 56 if no incorrect frequencies are seen Total 56 from incorrect frequencies scores max B1 eg 15, 8, 22, 11 with total 56		B1
	In Alt 2 for the final mark 15 must have been seen which may be in the table		

Q	Answer	Mark	Comments
	Alternative method 1		
	143.5 × 2 × 1.2(0) or 344.4(0)	M2	M1 any one correct step 143.5 × 2 or 287 or 143.5 × 1.2(0) or 172.2(0) or 1.2(0) × 2 or 2.4(0)
	0.1(0) × their 344.4(0) or 34.44	M1	oe 34.44 implies M3
	their 344.4(0) + their 34.44	M1dep	oe dep on previous M1 1.1(0) × their 344.4(0) implies 3rd and 4th M1
8(b)	378.84	A1	condone (£)378.84p SC4 354.84
	Alternative method 2		
	1.2(0) × 2 or 2.4(0)	M1	oe
	0.1(0) × 1.2(0) × 2 or 0.24	M1	oe extra amount per kg
	their 2.4(0) + their 0.24 or 2.64	M1dep	oe dep on previous M1 1.1(0) × their 2.4(0) implies 2nd and 3rd M1 2.64 implies M3
	143.5 × their 2.64	M1	oe
	378.84	A1	condone (£)378.84p SC4 354.84

Mark scheme and Additional guidance continue on the next page

	Alternative method 3		
	0.1 × 1.2(0) or 0.12	M1	oe
	1.2(0) + 0.1 × 1.2(0) or 1.32	M1dep	oe 1.1(0) × 1.2(0) or 1.32 implies M2
	their 1.32 × 2 or 2.64 or their 1.32 × 143.5 or 189.42	M1	oe 2.64 or 189.42 implies M3
	their 1.32 × 2 × 143.5	M1	oe 1.32 × 287 implies M4
8(b) cont	378.84	A1	condone (£)378.84p SC4 354.84
	Alternative method 4		
	143.5 ÷ 0.5 or 287	M1	oe
	0.1(0) × their 287 or 28.7(0)	M1	oe
	their 287 + their 28.7(0) or 315.7(0)	M1dep	dep on previous M1 1.1(0) × their 287 implies 2nd and 3rd M1
	their 315.7(0) × 1.2(0)	M1	
	378.84	A1	condone (£)378.84p SC4 354.84
	Additional Guidance		
	Choose the scheme that favours the student		
	Omitting the 10% extra will score a maximum of 2 marks		

Q	Answer	Mark	Comments
	Alternative method 1		
	1000 seen or used	B1	may be implied
	12 × their 1000 or 12 000 or 12 ÷ 400 or 0.03 or their 1000 ÷ 400 or 2.5 or 400 ÷ their 1000 or 0.4	M1	oe
	12 × their 1000 ÷ 400 or 12 ÷ their 0.4	M1dep	oe
8(c)	30	A1ft	ft their 1000
	Alternative method 2		
	1000 seen or used	B1	may be implied
	400 × 3 or 1200 and 1200 × 10	M1	oe eg in litres building up to 12000 or 12 litres
	3 × 10	M1	implies B1M2
	30	A1	
	Additional Guidance		
	Their conversion may be implied eg If 1200 used assume their conversion is 100 ml = 1 litre 1200 ÷ 400 = 3		B0M1M1depA1ft

Q	Answer	Mark	Comments
9(a)	**Alternative method 1**		
	40 ÷ 8 or 5	M1	may be embedded
	their 5 × 360 or 1800	M1dep	
	1600	A1	allow 1.6 kg
	Alternative method 2		
	360 ÷ 8 or 45	M1	
	their 45 × 40 or 1800	M1dep	
	1600	A1	allow 1.6 kg

Q	Answer	Mark	Comments
9(b)	**Alternative method 1**		
	8 + 6 + 8 or 22	M1	finding the longest length of the shape
	7 × (8 + 6 + 8) or 154 or 6 × 6 or 36	M1	
	7 × (8 + 6 + 8) + 6 × 6 or 154 + 36	M1	
	190 and Yes	A1	SC3 204 and No SC2 204
	Alternative method 2		
	8 + 6 + 8 or 22	M1	finding the longest length of the shape
	(8 + 6 + 8) × (6 + 7) or 286 or 8 × 6 or 48	M1	
	(8 + 6 + 8) × (6 + 7) − 2 × 8 × 6 or 286 − 96	M1	
	190 and Yes	A1	SC3 204 and No SC2 204

Mark scheme and Additional guidance continue on the next page

	Alternative method 3		
	6 × 6 or 36 or 8 × 7 or 56 or 6 × 7 or 42 or (6 + 7) × 6 or 78	M1	
9(b) cont	6 × 6 and 8 × 7 and 6 × 7 or 36 and 56 and 42 or 8 × 7 and (6 + 7) × 6 or 56 and 78	M1	oe 56 is implied by 112
	6 × 6 + 2 × 8 × 7 + 6 × 7 or 36 + 112 + 42 or 2 × 8 × 7 + (6 + 7) × 6 or 112 + 78	M1	oe
	190 and Yes	A1	SC3 204 and No SC2 204
	Additional Guidance		
	Check diagram for measurements eg 22		
	Award up to M2 even if not used or if seen in multiple attempts		

Q	Answer	Mark	Comments
9(c)	**Alternative method 1**		
	16 × 2400 or 38 400	M1	
	30 × 35 × 40 or 42 000	M1	
	42 000 and 38 400 and Yes	A2	A1 42 000 and 38 400 or A1ft one correct value and correct ft decision for their two values
	Alternative method 2		
	30 × 35 × 40 or 42 000	M1	
	their 42 000 ÷ 2400 or their 42 000 ÷ 16	M1	
	17.5 and Yes or 2625 and Yes	A2	A1 17.5 or 2625 or A1ft correct decision for their 17.5 or their 2625 with at least one method mark scored

Additional Guidance	
Ignore attempts to equate sides eg 42 000 = 38 400 Yes	M1M1A2

Q	Answer	Mark	Comments
10(a)	**Alternative method 1**		
	4 hours 30 mins or 4.5 hours	B1	may be implied
	3 × their 4.5 or 13.5 or 151.47 ÷ 3 or 50.49 or 151.47 ÷ their 4.5 or 33.66	M1	oe condone 13.30 for 13.5
	151.47 ÷ their 4.5 ÷ 3 or 11.22	M1dep	oe
	11.22 and Yes	A1ft	ft their 4 hours 30 mins
	Alternative method 2		
	4 hours 30 mins or 4.5 hours	B1	may be implied
	3 × their 4.5 or 13.5 or 11 × their 4.5 or 49.5(0)	M1	oe condone 13.30 for 13.5
	3 × their 4.5 × 11 or 148.5(0) or 151.47 ÷ 3 or 50.49	M1	
	148.5(0) and Yes or 49.5(0) and 50.49 and Yes	A1ft	ft their 4 hours 30 mins
	Alternative method 3		
	4 hours 30 mins or 4.5 hours	B1	may be implied
	151.47 ÷ 11 or 13.77 or 151.47 ÷ 3 or 50.49	M1	
	151.47 ÷ 11 ÷ 3 or 4.59	M1	implies M2
	4.5 and 4.59 and Yes	A1ft	ft their 4 hours 30 mins

Mark scheme and Additional Guidance follow on the next page

Q	Answer	Mark	Comments
10(a) cont	**Alternative method 4**		
	4 hours 30 mins or 4.5 hours	B1	may be implied
	3 × their 4.5 or 13.5	M1	
	151.47 ÷ 11 or 13.77	M1	
	13.5 and 13.77 and Yes	A1ft	ft their 4 hours 30 mins
	Additional Guidance		
	13.30 implies 4 hours 30 mins		
	151.47 ÷ 16.5 = 9.18 and No		B0M1M1A1ft
	151.47 ÷ 12.9 = 11.74… and Yes		B0M1M1A1ft
	4h 30 seen then used as 4.3 gains max 3 marks eg 11 × 4.3 = 47.3 47.3 × 3 = 141.9(0) and Yes		B0M1M1A1ft
	The B1 may be implied from a correct answer. eg 11.22 implies use of 4.5 hours and with correct decision		B1M1M1 B1M1M1A1

Q	Answer	Mark	Comments
10(b)	2.76 ÷ 138 or 0.02 or 2p or 138 ÷ 2.76 or 50 or 138 ÷ 97 or 1.42… or 97 ÷ 138 or 0.7(0…)	M1	oe eg in pence
	97 × their 0.02 or 97 ÷ their 50 or 2.76 ÷ their 1.42… or 2.76 × their 0.7(0…) or 194	M1dep	oe eg in pence
	1.94	A1	
	Additional Guidance		
	Allow working in pence for up to M2 but final answer must be in pounds		
	Award up to M1 even if not used or if seen in multiple attempts		

Q	Answer	Mark	Comments
10(c)	**Alternative method 1** using mean		
	7 + 3 + 2 + 11 + 7 + 5 + 6 + 5 + 9 + 1 + 6 + 7 or 69	M1	62.58(…) implies first M1
	their 69 ÷ 12 or 5.75 or 12 × 5 or 60	M1	
	5.75 and No or 60 and 69 and No	A1	
	Alternative method 2 using median		
	1, 2, 3, 5, 5, 6, 6, 7, 7, 7, 9, 11	M1	ordering must order at least 7 from either end
	selects their middle value or 6 chosen	M1dep	implies M2
	6 and No	A1	
	Additional Guidance		
	5.75 and No with no working – assume mean used		M1M1A1
	6 and No with no working – assume median used		M1M1A1
	Incorrect conversion of 5.75 to mins and secs loses the final mark eg 5.75 = 5 mins 75 seconds and No		M1M1A0

Q	Answer	Mark	Comments
11(a)	**Alternative method 1**		
	90 ÷ 180 or 0.5 or 180 ÷ 90 or 2	M1	implied by (apprentices =) 10 or (college =) 80
	160 × their 0.5 and 20 × their 0.5 or 160 ÷ their 2 and 20 ÷ their 2 or 80 and 10	M1dep	oe
	their 80 − their 10	M1dep	
	70	A1	
	Alternative method 2		
	90 ÷ 180 or 0.5 or 180 ÷ 90 or 2	M1	
	160 − 20 or 140	M1	
	their 140 × their 0.5 or their 140 ÷ their 2	M1dep	oe dep on M2
	70	A1	
	Additional Guidance		
	Beware 90 − 20° = 70		M0M0M0A0
	For the first mark do not allow 2 or 0.5 from use of 360 and 180 unless recovered		

Q	Answer	Mark	Comments
	Alternative method 1		
	40 + 15 + 35 or 90 (minutes) or 1 hour 30 minutes	M1	condone 1.30
	1.50 − their 1 hour 30 minutes	M1dep	allow any format for times
	12.20 (pm)	A1	oe eg twenty past twelve SC2 12.20 am
	Alternative method 2		
	1.50 (pm) – 35 (mins) or 1.15 (pm) or 1.50 (pm) – 15 (mins) or 1.35 (pm) or 1.50 (pm) – 40 (mins) or 1.10 (pm)	M1	M2 1.50 − 35 − 15 − 40 allow any format for times
11(b)	their 1.15 (pm) – 15 (mins) – 40 (mins) or their 1.35 (pm) – 35 (mins) – 40 (mins) or their 1.10 (pm) – 35 (mins) – 15 (mins)	M1dep	
	12.20 (pm)	A1	SC2 12.20 am
	Additional Guidance		
	In all cases accept times given in alternate forms, including words		
	Condone inconsistent or incorrect time formats for the subtractions eg Alt 1 1.50 – 90 eg Alt 2 1.50 – 0.35		M1M1 M1
	Trying a start time can gain the first M1 for embedded addition of 40 + 15 + 35		

Q	Answer	Mark	Comments
	Alternative method 1		
	24 ÷ 3 or 8	M1	oe
	24 − their 8 or their 8 × 2 or 16	M1dep	oe $24 \times \dfrac{2}{3}$ oe scores M2
	their 16 × 2 or 32	M1dep	oe
	0.5 × 21.8(0) or 10.9(0)	M1	oe
	21.8(0) + their 10.9(0) or 32.7(0)	M1dep	oe dep on previous M1 21.8(0) × 1.5 oe scores M2
	32 and 32.7(0) and (Shop) A	A1	
11(c)	**Alternative method 2**		
	24 × 2 or 48	M1	
	their 48 ÷ 3 or 16	M1dep	
	their 48 − their 16 or their 16 × 2 or 32	M1dep	oe
	0.5 × 21.8(0) or 10.9(0)	M1	oe
	21.8(0) + their 10.9(0) or 32.7(0)	M1dep	oe dep on previous M1 21.8(0) × 1.5 oe scores M2
	32 and 32.7(0) and (Shop) A	A1	
	Additional Guidance		
	Shop A may be selected by circling it in the question		