Functional Skills Level 1
MATHEMATICS
8361/2

Paper 2 Calculator

Mark scheme

November 2022

Version: 1.0 Final

2 2 B G 8 3 6 1 / 2 / M S

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.

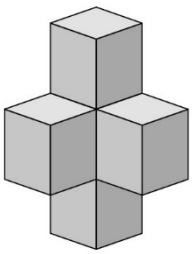
Section A

Q	Answer	Mark	Comments
1	C	B1	

Q	Answer	Mark	Comments
2	$\frac{15}{4}$	B1	

Q	Answer	Mark	Comments
3	[58, 62]	B1	

Q	Answer	Mark	Comments
4	30	B1	

Q	Answer	Mark	Comments
5	B	B1	accept selection of shape instead of letter
	Additional Guidance		
			

Q	Answer	Mark	Comments
6	14.8	B1	
	Additional Guidance		
	14.80		B0

Q	Answer	Mark	Comments
7	16 + 19 + 16 + 10 + 17 + 12 or 90	M1	
	their 90 ÷ 6	M1dep	
	15	A1	SC1 for 80

Q	Answer	Mark	Comments
8	**Alternative method 1**		
	0.4 × 630 or 252	M1	oe eg 63 × 4
	630 + their 252	M1dep	
	882	A1	SC1 378
	Alternative method 2		
	1.4 seen	M1	oe
	their 1.4 × 630	M1dep	
	882	A1	SC1 378

Section B

Q	Answer	Mark	Comments
9(a)	Conversion of units to a comparable unit	B1	3450 (mm) or 345 (cm), 60 (cm) and 45 (cm) or 0.6 (m) and 0.45 (m) implied by a correct answer
	Adding the lengths of at least 3 cupboards eg $2 \times 600 + 450$ or 3×450 or 5×600 or Finding the maximum number of cupboards for each size of cupboard that would fit in the room $3450 \div 600$ or $345 \div 60$ or 5.75 or $3450 \div 450$ or $345 \div 45$ or 7.66…	M1	any consistent units cupboards can all be the same type any consistent units
	Adding lengths of cupboards (in any unit) totalling [3 m, 4 m]	M1dep	eg 2 large and 4 small = 3 m $4 \times 600 + 2 \times 450 = 3300$ cupboards can all be the same type eg $5 \times 0.6 = 3$ (m) must have the correct total
	5 large and 1 small or 2 large and 5 small	A1	SC2 5 large and 7 small
	Additional Guidance		
	Correct combinations working in mm: $3000 + 450 = 3450$ $1200 + 2250 = 3450$		
	Conversions may be seen at any point eg $4 \times 600 + 2 \times 450 = 3.3$ (implied conversion of 600 and 450 to 0.6 and 0.45)		B1M1M1
	Correct answer with no working		B1M1M1 A1

Q	Answer	Mark	Comments
9(b)	Draws at least one square with side 4 cm or Draws at least one rectangle with sides 3 cm and 4 cm or 600 ÷ 150 or 4 cm or 450 ÷ 150 or 3 cm	B1	anywhere in the grid 4 cm or 3 cm may be implied by marks on the edge of the grid *or* a cupboard with side length 4 cm or 3 cm
	Draws exactly 3 squares of the same size and Draws exactly 2 rectangles of the same size	B1	anywhere in the grid the 2 rectangles can be squares but must be a different size to the 3 squares
	Draws either exactly 3 correct squares on one of the walls or exactly 2 correct rectangles on one of the walls	M1	condone extras on the other walls
	Fully correct drawing	A1	all cupboards on one wall SC2 fits exactly three lots of 4 cm and two lots of 3 cm vertically anywhere in the grid. may be marks on edge or shapes of any width
	Additional Guidance		
	Fully correct drawing has three 4 by 4 squares and two 3 by 4 rectangles completely filling one long wall		
	Ignore labels		
	Condone indication of size by dots joined from centres of corner squares of cupboards		

Q	Answer	Mark	Comments
9(c)	**Alternative method 1**		
	85.5(0) ÷ 2 or 42.75	M1	implied by 128.25
	85.5(0) × 3 + their 42.75 × 3 or (85.5(0) + their 42.75) × 3 or 384.75	M1dep	oe eg 85.5(0) × 6 – their 42.75 × 3
	2 × 75 or 150	M1	
	their 384.75 + their 150	M1	their 384.75 must be their cost for >1 large cupboard their 150 must be their cost for >1 small cupboard
	534.75 and Yes or 15.25 left over /spare	A1	SC2 663 SC3 497.25
	Alternative method 2		
	85.5(0) ÷ 2 or 42.75	M1	implied by 128.25
	85.5(0) × 3 + their 42.75 × 3 or (85.5(0) + their 42.75) × 3 or 384.75	M1dep	oe
	2 × 75 or 150	M1	
	550 – their 150 or 400 or 550 – their 384.75 or 165.25 or 550 – their 384.75 – 150 or 15.25	M1	oe their 150 must be their cost for >1 small cupboard their 384.75 must be their cost for >1 large cupboard
	384.75 and 400 and Yes or 150 and 165.25 and Yes or 15.25 left over/spare	A1	SC2 663 SC3 497.25

Additional Guidance is on the next page

	Additional Guidance	
9(c) cont	SC2 is for ignoring the half price altogether	
	Common error is to have the half price offer on both sizes of cupboard eg 85.50 ÷ 2 = 42.75 85.50 × 3 + 42.75 × 3 = 384.75 75 + 37.50 = 112.50 384.75 + 112.50 = 497.25	 M1 M1 M0 M1A0
	do not allow misreads	

Q	Answer	Mark	Comments
10(a)	**Alternative method 1**		
	(223 – 150) × 60 or 4380 or 84 × 150 or 12 600 or (84 – 60) × 150 or 3600 or 223 × 60 or 13 380 or 223 × 84 or 18 732 or (223 – 150) × (84 – 60) or 1752	M1	
	(223 – 150) × 60 + 84 × 150 or (84 – 60) × 150 + 223 × 60 or 223 × 84 – (223 – 150) × (84 – 60) or 16 980	M1dep	
	their 16 980 × 1.25 or 21 225	M1	their 16 980 cannot be a single length of the field and cannot be 20 or 1000
	their 21 225 ÷ 1000 or 21.225 or 20 × 1000 or 20 000	M1dep	dep on previous M1
	21.225 and No or 20 000 and 21 225 and No	A1	accept 'He needs 1(.225) tonne(s) or 1225 kg more' allow 21 with correct area seen

Mark scheme continues on the next page

10(a) cont	**Alternative method 2**		
	(223 – 150) × 60 or 4380 or 84 × 150 or 12 600 or (84 – 60) × 150 or 3600 or 223 × 60 or 13 380 or 223 × 84 or 18 732 or (223 – 150) × (84 – 60) or 1752	M1	
	(223 – 150) × 60 + 84 × 150 or (84 – 60) × 150 + 223 × 60 or 223 × 84 – (223 – 150) × (84 – 60) or 16 980	M1dep	
	20 × 1000 or 20 000	M1	
	their 20 000 ÷ 1.25 or 16 000	M1dep	oe dep on 3rd M1
	16 980 and 16 000 and No	A1	

Q	Answer	Mark	Comments
10(b)	**Alternative method 1**		
	55 + 47 + 45 + 44 + 59 or 250	M1	allow rounding to 1 sf for 55 or 45 allow rounding up or down
	their 250 × 2 or 500 or their 250 × 8.29 or 2072.5(0)	M1dep	oe allow rounding of 8.29 to 8.3(0) or 8 or 8.5(0)
	their 500 × 8.29 or 4145 or their 2072.5(0) × 2 or 4145	M1dep	allow rounding of 8.29 to 8.3(0) or 8 or 8.5(0)
	4145 or Correct answer for their correctly rounded values	A1	accept any sensible rounding for their values
	Alternative method 2		
	55 + 47 + 45 + 44 + 59 or 250	M1	allow rounding to 1 sf for 55 or 45 allow rounding up or down
	their 250 ÷ 5 × 8.29 or 50 × 8.29 or 414.5(0)	M1dep	oe allow rounding of 8.29 to 8.3(0) or 8 or 8.5(0)
	their 414.5(0) × 10 or 4145	M1dep	
	4145 or Correct answer for their correctly rounded values	A1	accept any sensible rounding for their values

Mark scheme and additional guidance continue on the next page

10(b) cont	**Alternative method 3**		
	55 × 8.29 or 455.95 or 47 × 8.29 or 389.63 or 45 × 8.29 or 373.05 or 44 × 8.29 or 364.76 or 59 × 8.29 or 489.11	M1	allow rounding of number of boxes to 1 sf for 55 or 45 allow rounding up or down allow rounding of 8.29 to 8.3(0) or 8 or 8.5(0)
	55 × 8.29 + 47 × 8.29 + 45 × 8.29 + 44 × 8.29 + 59 × 8.29 or 2072.5(0)	M1dep	allow rounding of 8.29 to 8.3(0) or 8 or 8.5(0)
	their 2072.5(0) × 2	M1dep	oe may be implied
	4145 or Correct answer for their correctly rounded values	A1	accept any sensible rounding
	Alternative method 4 (median)		
	47 indicated as middle or median value	M1	
	their 47 × 10 or 470	M1dep	
	their 470 × 8.29	M1dep	allow rounding of 8.29 to 8.3(0) or 8 or 8.5(0)
	3896.30	A1	accept any sensible rounding
	Additional Guidance		
	Accept any sensible rounding at any point in their calculations		

Q	Answer	Mark	Comments
10(c)	**Alternative method 1 (bar chart or vertical line graph)**		
	Chooses bar chart or vertical line graph	B1	at least one bar or one vertical line must be seen
	Frequency axis has linear scale starting from zero up to at least 90 000	B1	for bar chart the frequency may be on the horizontal or vertical axis condone zero not labelled labelling/notches for values must be at the top of each square
	All heights correct for their increasing scale or heights in correct proportion if no scale is given	B1ft	±½ square for labelling in the middle of squares count the 'blocks' eg heights 8.8 cm, 7.2 cm, 4.6 cm and 3.4 cm
	Fully correct labelling for their type of graph Area and/or (m^2) on frequency axis **and** daffodil labels on the other axis or on the bars **and** equal width bars and equal gaps or no gaps between them	B1	oe allow abbreviations condone different gap between axis and first bar
	Alternative method 2 (pictogram)		
	Chooses pictogram	B1	
	Suitable key with icon and scale	B1	a suitable key is one that can be split for their values eg  = 10 000
	Fully correct pictogram with all rows correct and equal spaces between rows and icons	B2ft	ft their key mark broad intention to align icons B1 at least one row drawn correctly

10(c) cont	**Alternative method 3 (pie chart)**		
	Chooses pie chart	B1	
	$\frac{88(000)}{240(000)} \times 360$ or $88(000) \times 1.5$	M1	oe correct method shown for one angle implied by one correct angle seen or drawn
	All 4 sectors drawn to correct size 132, 108, 69 and 51	A1	$\pm$ 2°
	4 sectors drawn and labelled in correct order of size	B1	
	Additional Guidance		
	Accept G(D), W(L), I(F), P(P) for the labels but not 88(000), 72(000), 46(000), 34(000)		
	If bars are labelled for the wrong daffodil, award heights mark if all four correct heights are seen but do not award label mark		
	In **Alt 1**, heights may be plotted with crosses. If the crosses are at the top of vertical lines, then the mark for suitable diagram can be awarded. However, if heights are plotted with crosses but have no lines, or are joined together, then all marks except the B1 for suitable diagram can be accessed. Gaps between the crosses must be equal.		
	For a pie chart the correct angles are 132° for Golden Ducat, 108° for White Lion, 69° for Ice Follies and 51° for Pink Pride Labelling mark can be awarded for any pie chart with 4 sectors only, in descending order of size labelled Golden Ducat, White Lion, Ice Follies, Pink Pride		

Q	Answer	Mark	Comments
11(a)	12.99 + 12.99 + 14.24 or 40.22	M1	oe
	2 + 4 + 11 or 17	M1	25.49 selected implies 17
	their 40.22 – 25.49	M1	their 40.22 must be > 25.49
	14.73	A1	

Q	Answer	Mark	Comments
11(b)	2 × 0.6 × 0.4 or 0.48	M1	
	their 0.48 × 4.25 or 2.04	M1	their 0.48 cannot be a single length
	15.25 + their 2.04 or 17.29	M1dep	dep on 2nd M1 their 2.04 cannot be 4.25
	20 – their 17.29	M1	oe their 17.29 must be in range (15.25, 20)
	2.71	A1	
	Additional Guidance		
	Working out volume incorrectly giving a cost > £20 can score a maximum of 2 marks eg 2 + 0.6 + 0.4 = 3 3 × 4.25 = 12.75 15.25 + 12.75 = 28 20 – 28 = –8		 M0 M1 M1 M0A0

Q	Answer	Mark	Comments	
12(a)	**Alternative method 1**			
	16.83 ÷ 3 or 5.61	M1		
	16.83 – their 5.61 or their 5.61 × 2 or 11.22	M1dep		
	11.22 and No	A1		
	Alternative method 2			
	$1 - \frac{1}{3}$ or $\frac{2}{3}$	M1		
	$\frac{2}{3}$ × 16.83 or 11.22	M1dep		
	11.22 and No	A1		
	Additional Guidance			
	'No' can be implied by a statement eg Amy is wrong			
	Allow use of 0.33 or 33% or better for up to M2 eg 0.33 × 16.83 = 5.55 16.83 – 5.55 = 11.28			M1M1A0

Q	Answer	Mark	Comments
12(b)	8.4(0) ÷ 3 × 7 or 19.6	M2	oe M1 8.4(0) ÷ 3 or 2.8(0) or 8.40 × 7 or 58.8(0)
	£19.60	A1	correct money notation allow £19.60p SC1 29.4(0)
	Additional Guidance		
	Allow use of 0.33 or 33% or better for up to M2 eg 8.40 × 0.33 = 2.77 2.77 × 7 = 19.39		M1M1A0

Q	Answer	Mark	Comments
12(c)	**Alternative method 1**		
	105 + 20 + 35 or 160 (mins)	M1	
	their 160 ÷ 60 or 2.66… or 2h 40	M1dep	oe may be implied by adding a total of 2h 40 mins to 7.30
	7.30 + their 2h 40 or 10.10 or 22.17 – 7.30 (pm) or 2h 47 or 22.17 – their 2h 40 or 7.37	M1	oe their 2h 40 must be the sum of all three times and must be used as hours and mins but may be added in bits eg 7.30 →8.30→9.30→10.10 is M3 eg 7.30 + 30 = 8 8 + 60 = 9 9 + 30 = 9.30 9.30 + 40 = 10.20 M3 error in final addition but a total of 2 h 40 mins shown by additions
	10:10 (pm) and Yes or 22:10 and Yes or 2h 40 and 2h 47 and Yes or 7.37 and Yes	A1	
	Alternative method 2		
	105 + 20 + 35 or 160 (mins)	M1	
	22.17 – 7.30 (pm) or 2h 47	M1	
	their 2h 47 converted to minutes or 167 (mins)	M1dep	dep on 2nd M1 eg 2 × 60 + 47
	160 and 167 and Yes	A1	

Mark scheme and additional guidance continue on the next page

12(c) cont	**Alternative method 3**		
	105 ÷ 60 or 1.75 or 1h 45	M1	or equivalent conversion eg of 125 mins if 20 added
	7.30 + their 1h 45 + 20 (mins) + 35 (mins)	M2	oe their 1h 45 must be hours and minutes M1 7.30 + two of the three times added eg 7.30 + 20 (mins) + 35 (mins) or 8.25 or their 1h 45 + 20 (mins) + 35 (mins)
	10:10 (pm) and Yes or 22:10 and Yes	A1	
	Alternative method 4		
	105 ÷ 60 or 1.75 or 1h 45	M1	or equivalent conversion eg of 125 mins if 20 added
	their 1h 45 + 20 (mins) + 35 (mins) or 2h 40	M1	oe their 1h 45 must be hours and minutes
	22.17 – 7.30 (pm) or 2h 47 or 22.17 – their 2h 40 or 7.37	M1	oe
	2h 40 and 2h 47 and Yes or 7.37 and Yes	A1	

Additional guidance is on the next page

	Additional Guidance	
12(c) cont	An incorrect conversion of 105 minutes to 1h 5 mins can score up to M2 eg 7.30 + 1h 5 + 20 (mins) + 35 (mins) (= 9.30) scores the middle two marks on Alt 3	
	If minutes are not converted to hours and minutes the maximum score is M1 eg Alt 1 160 mins seen 7.30 + 160 no further marks unless recovered	M1
	When adding any times eg on to 7.30, the times may be split up to ease addition eg adding 105 minutes to 7.30 may be seen as 7.30 + 60 = 8.30 8.30 + 30 = 9 9 + 15 = 9.15 This implies the conversion to hours and minutes so would score the first M1 on Alt 3 or 4 Additions or correct end times must be seen eg Alt 1 160 seen 7.30 →8.30→9.30→10.20 no evidence of number of minutes added (total added is 2h 50) or conversion	M1 M0M0
	Use the scheme that favours the student	

Q	Answer	Mark	Comments
12(d)	**Alternative method 1**		
	1000 ÷ 5 or 200	M1	
	their 200 × (their 5 + 1) or 1000 + their 200	M1dep	
	1200	A1	
	Alternative method 2		
	1206 ÷ (5 + 1) or 201	M1	
	their 201 × 5 or 1206 – their 201	M1dep	
	1005	A1	
	Alternative method 3		
	1000 ÷ 5 or 200 or 1206 ÷ (5 + 1) or 201	M1	
	1206 – 1000 or 206	M1	
	200 and 206 or 201 and 206	A1	
	Alternative method 4		
	1000 ÷ 5 or 200	M1	
	1206 ÷ (5 + 1) or 201	M1	
	200 and 201	A1	
	Additional Guidance		
	Answer 1005 : 201		M1M1A1
	206 may be implied eg 200 seen and 6 more		