AQA

Functional Skills Level 1
MATHEMATICS
8361/2

Paper 2 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.

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

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 ≤ 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.

Q	Answer	Mark	Comments
1	D	B1	accept correct net circled
	Additional Guidance		

Q	Answer	Mark	Comments
2	2704	B1	allow dot or comma between 2 and 7
	Additional Guidance		
	2704^2		B0

Q	Answer	Mark	Comments
3	6	B1	
	Additional Guidance		

Q	Answer	Mark	Comments
4	$\dfrac{2}{6}$ or $\dfrac{1}{3}$	B1	oe fraction
	Additional Guidance		

Q	Answer	Mark	Comments
5	[128, 132]	B1	
	Additional Guidance		

Q	Answer	Mark	Comments
6	60 × 24 (× 7) or 1440 (× 7) or 60 × 7 (× 24) or 420 (× 24) or 24 × 7 (× 24) or 168 (× 60)	M1	
	10 080	A1	

Additional Guidance		
(60 × 24) + (7 × 24)		B0
60 × 24 = 1440 and 24 × 7 = 168 and 1440 + 168		B0

Q	Answer	Mark	Comments
7	$\dfrac{2}{3}$ $\dfrac{7}{10}$ $\dfrac{3}{4}$ with no incorrect conversions seen	B2	oe condone middle value omitted B1 0.7, 0.75 and 0.6(6)… or 0.67 seen or correct fractions with the same denominator (not ordered) eg $\dfrac{42}{60}$ $\dfrac{45}{60}$ $\dfrac{40}{60}$ SC1 $\dfrac{3}{4}$ $\dfrac{7}{10}$ $\dfrac{2}{3}$ oe with no incorrect conversions

Additional Guidance	
Allow any equivalent fractions, decimals or percentages	
0.6(6), 0.7, 0.75	B2
66%, 70%, 75%	B2
70%, 75% and 66%	B1

Q	Answer	Mark	Comments
8	4 + 12 + 10 + 13 + 4 + 6 + 14 or 63	M1	condone one error or omission
	their 63 ÷ 7	M1dep	
	9	A1	SC1 51

Additional Guidance	
brackets omitted eg 4 + 12 + 10 + 13 + 4 + 6 + 14 ÷ 7	M1 only unless recovered

Q	Answer	Mark	Comments
9(a)	**Alternative method 1**		
	26 × 9.65 or 250.9(0)	M1	
	(30 – 26) × 9.65 × 2 or 4 × 9.65 × 2 or 4 × 19.3 or 77.2(0)	M1	
	their 77.2(0) + their 250.9(0) or 328.1	M1dep	dep on M2
	328.10	A1	condone £328.10p
	Alternative method 2		
	(30 − 26) × 2 or 8	M1	34 implies M2
	26 + their 8 or 34	M1dep	
	their 34 × 9.65 or 328.1	M1dep	
	328.10	A1	condone £328.10p
	Alternative method 3		
	30 × 9.65 or 289.5(0)	M1	
	(30 – 26) × 9.65 or 38.6	M1	
	their 289.5(0) + their 38.6 or 328.1	M1dep	dep on M2
	328.10	A1	condone £328.10p
	Additional Guidance		

Q	Answer	Mark	Comments
9(b)	(Mon) 4 or (Thurs) 3 or (Sat) 4	M1	may be next to the table implied by the correct total for that day
	(their 4 + their 3 + their 4) × 8.1(0) or their 4 × 8.1(0) + their 3 × 8.1(0) + their 4 × 8.1(0) or 32.4(0) + 24.3(0) + 32.4(0) or 89.1(0) 90 − [(their 4 + their 3 + their 4) × 8.1(0)] or 0.9(0) or 90p	M1	oe
	89.1(0) and No or 0.9(0) and No or 90p (short) and No	A1	
	Additional Guidance		

Q	Answer	Mark	Comments
9(c)	**Alternative method 1**		
	100 − 85 or 15 or 1 − 0.85 or 0.15	M1	15 can be seen as 10 + 5
	23.8(0) × their 0.15	M1dep	oe
	3.57	A1	
	Alternative method 2		
	(80% =) 23.8(0) ÷ 10 × 8 or 19.04 and (5% =) their 2.38 ÷ 2 or 1.19 or 0.85 × 23.8(0) or 20.23	M1	oe
	23.8(0) − (their 19.04 + their 1.19) or 23.8(0) − their 20.23	M1dep	
	3.57	A1	

Additional Guidance		
An attempt to calculate 10% and 5% and add the values implies M1 for 15% Example 10% = 2.4, 5% = 1.2 then 2.4 + 1.2 = 3.6		M1
A common error is 23.80 − 85% = 22.95		M0M0A0
23.8(0) × 85% with no answer or an incorrect answer		M0

Q	Answer	Mark	Comments
9(d)	**Alternative method 1**		
	185 ÷ 35	M1	
	[5.2, 5.3] or $5\frac{2}{7}$ or 5 weeks and 2 days	A1	implied by correct answer
	6 with no arithmetical errors	A1	
	Alternative method 2		
	multiplies 35 by an integer between 1 and 10	M1	
	(5 × 35 =) 175 and (6 × 35 =) 210	A1	implied by correct answer
	6	A1	
	Additional Guidance		
	Build-up leading to 6 but with errors eg 35, 70, 105, 140,165, (200) so 6 weeks		M1A1A0
	Just listing multiples of 35 past 210 can gain M1A1 if 175 and 210 seen		
	185 – 35 – 35 – 35 – 35 – 35 = 10 Answer 5 weeks		M1 A0A0

Q	Answer	Mark	Comments
	Alternative method 1		
	15 × 7.2 or 108	M1	
	their 108 ÷ 3 or their $108 \times \dfrac{1}{3}$ or 36	M1	
	their 36 × 2.75	M1	
	99	A1	
	Alternative method 2		
	15 × 7.2 or 108	M1	
	their 108 × 2.75 or 297	M1	
	their 297 ÷ 3	M1	
10(a)	99	A1	
	Alternative method 3		
	15 ÷ 3 or 5 or 7.2 ÷ 3 or 2.4	M1	
	their 5 × 7.2 or their 2.4 × 15 or 36	M1	
	their 36 × 2.75	M1	
	99	A1	
	Additional Guidance		
	Allow rounding up of their area if a decimal		
	Dividing by 3 twice can gain max M1M0M1A0		

Q	Answer	Mark	Comments
10(b)	**Alternative method 1**		
	2.5 × 1.8 × 1.2 or 5.4	M1	
	their 5.4 × 1000 or 5400	M1	their 5.4 cannot be 2.5 or 1.8 or 1.2 5400 implies M2
	their 5400 ÷ 360	M1	oe implied by correct number of fish for their volume allow embedded
	15	A1	
	Alternative method 2		
	2.5 × 1.8 × 1.2 or 5.4	M1	
	360 ÷ 1000 or 0.36	M1	
	their 5.4 ÷ their 0.36	M1	oe implied by correct number of fish for their volume allow embedded
	15	A1	

Additional Guidance	
Beware addition for volume leading to 15 fish 2.5 + 1.8 + 1.2 = 5.5 5.5 × 1000 = 5500 5500 ÷ 360 = 15.27 so 15 fish	M0 M1 M1A0
Answer 15 with no working gains full marks	
For embedded answers 15 must be chosen Eg 5.4 × 1000 = 5400 360 × 15 = 5400 Answer 5400	M1M1 M1 A0

Q	Answer	Mark	Comments
10(c)	**Alternative method 1**		
	13.5(0) ÷ 2 or 6.75	M1	
	13.5(0) × 3 or 40.5(0) or 13.5(0) ÷ 2 × 3 or 20.25	M1	
	13.5(0) × 3 + their (13.5(0) ÷ 2) × 3	M1	implies M3
	60.75	A1	
	Alternative method 2		
	13.5(0) ÷ 2 or 6.75	M1	
	13.5(0) + their (13.5(0) ÷ 2) or 20.25	M1	13.5(0) × 1.5 implies M2
	their 20.25 × 3	M1dep	dep on M2
	60.75	A1	
	Alternative method 3		
	13.5(0) ÷ 2 or 6.75	M1	
	13.5(0) × 6 or 81 or 13.5(0) ÷ 2 × 3 or 20.25	M1	
	13.5(0) × 6 − their (13.5(0) ÷ 2) × 3 or 81 − 20.25	M1	implies M3
	60.75	A1	
	Alternative method 4		
	3 ÷ 2 or 1.5	M1	
	their 1.5 × 3 or 4.5	M1dep	
	their 4.5 × 13.5(0)	M1dep	
	60.75	A1	
	Additional Guidance		

Q	Answer	Mark	Comments
11(a)	one stall drawn to correct size	B1	3 by 1, 2 by 2 or 3 by 1.5 mark intention
	6 stalls drawn	B1	any size
	correct number and sizes of all stalls	B1	3 of 3 by 1, 2 of 2 by 2 , 1 of 3 by 1.5 implies B3
	2 m space between each stall with at least 3 stalls drawn	B1	
	Additional Guidance		

Q	Answer	Mark	Comments
11(b)	**Alternative method 1**		
	$55 \times \dfrac{20}{100}$ or 55×0.2 or 11	M1	oe 55×0.8 implies M2
	$55 -$ their 11 or 44	M1dep	
	their 44×3	M1	
	132	A1	
	Alternative method 2		
	55×3 or 165	M1	
	their $165 \times \dfrac{20}{100}$ or their 165×0.2 or 33	M1	oe
	their $165 -$ their 33	M1dep	dep on 2nd M1 any multiple of 55×0.8 implies M3
	132	A1	
	Alternative method 3		
	$55 \times \dfrac{20}{100}$ or 55×0.2 or 11	M1	
	their 11×3 or 33	M1	
	$55 \times 3 -$ their 33	M1dep	dep on M2
	132	A1	
	Additional Guidance		

Q	Answer	Mark	Comments
11(c)	**Alternative method 1**		
	30 (mins) + 40 (mins) or 70 (mins) or 1h 10 (mins)	M1	implied by 8.40
	7.30 – their 1 h 10(mins)	M1dep	
	6.20 (pm) or 18.20	A1	SC2 6.20 am
	Alternative method 2		
	7.30 – 40 (mins) or 6.50 or 7.30 – 30 (mins) or 7	M1	7.30 – 30 – 40 M2
	their 6.50 – 30 (mins) or their 7 – 40 (mins)	M1dep	
	6.20 (pm) or 18.20	A1	SC2 6.20 am
	Additional Guidance		
	Condone 30 mins written as 0.3(0) if clearly used as 30 mins and not 0.3 of an hour		

Q	Answer	Mark	Comments
12(a)	Temperature axis Suitable linear scale from zero and label	B1	label can be temp or °C suitable scale means 1cm = 2, 2.5, 5 or 10 a time series graph can have a broken axis
	Suitable diagram drawn **and** month axis labelled	B1	suitable diagrams are bar chart, vertical line chart or line graph such as time series labels can be on bars and can be A,M,J,J,A,S
	All bars/lines/points heights correct for their attempt at a linear scale	B1	mark intention for their scale
	Correct format for their chosen suitable diagram	B1	**Bar chart** can be horizontal or vertical format must have equal width bars, with either equal gaps or no gaps condone no gap at start if gaps used **Vertical line chart** must have equal gaps **Time series line graph** points plotted consistent distances apart and joined with straight lines (allow dotted or solid), not extended either end and not joined as a polygon
	Additional Guidance		

Q	Answer	Mark	Comments
	Alternative method 1		
	760 chosen	B1	implied by correct answer
	21.5(0) × 14 or 301	M1	
	their 760 + their 301 or 1061	M1dep	their 760 must be a value from the table
	1061 and Yes	A1ft	ft their 760 which must be a value from the table ignore further working eg finding amount left if 1061 seen
	Alternative method 2		
	760 chosen	B1	implied by correct answer
	1100 – their 760 or 340	M1	their 760 must be a holiday cost from the table
	their 340 ÷ 21.5(0) or 15.(8..) or 21.5(0) × 14 or 301	M1dep	
12(b)	15.(8..) and Yes or 340 and 301 and Yes	A1ft	ft their 760 which must be a holiday cost from the table
	Alternative method 3		
	760 chosen	B1	
	21.5(0) × 14 or 301	M1	
	1100 – their 301 or 799	M1	
	799 and Yes	A1	ft their decision compared to their chosen holiday cost from the table
	Additional Guidance		
	760 may be selected by indication in the table		
	For Alt 3 they must indicate what holiday cost they are comparing with Examples Ans 799 and Yes but no holiday cost indicated/selected Ans 799 and Yes and 760 indicated/selected Ans 799 and No and 937 indicated/selected		B0M1M1A0 B1M1M1A1 B0M1M1A1

Q	Answer	Mark	Comments
12(c)	6500 ÷ 7.38 or [880,881)	M1	
	881	A1	
	Additional Guidance		
	Allow embedded answer eg 7.38 × 881 = 6501.78		M1A1

Q	Answer	Mark	Comments
12(d)	$8 + 3$ or 11 or $\dfrac{8}{60}$ or $\dfrac{3}{60}$	M1	oe
	$\dfrac{11}{60}$	A1	oe fraction, decimal or percentage 0.18(3…) or 18.(3..)% SC1 $\dfrac{13}{60}$ or $\dfrac{21}{60}$ or $\dfrac{24}{60}$ oe
	Additional Guidance		
	Ignore attempts to simplify or convert to different format after correct answer seen		