



GCSE MATHEMATICS 8300/3F

Foundation Tier Paper 3 Calculator
First Third

Mark scheme
November 2024

Version: 1.0

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.

No student should be disadvantaged on the basis of their gender identity and/or how they refer to the gender identity of others in their exam responses.

A consistent use of 'they/them' as a singular and pronouns beyond 'she/her' or 'he/him' will be credited in exam responses in line with existing mark scheme criteria.

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

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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 $a \leq \text{value} < b$
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.

Q	Answer	Mark	Comments
1(a)	195	B1	

Q	Answer	Mark	Comments
1(b)	361	B1	

Q	Answer	Mark	Comments
2	$3y$	B1	
	Additional Guidance		
	$3 \times y$ or $y \times 3$		B0
	y^3		B0

Q	Answer	Mark	Comments
3(a)	$12 \div 3$ or 4 or $96 \div 3$ or 32 or 96×12 or 1152 or $96 \times 12 \div 3$ or 384	M1	oe accept working in pounds or pence
	3.84	A1	
	Additional Guidance		
	Condone £3.84p		

Q	Answer	Mark	Comments
3(b)	$40 \div 4$ or $20 \div 2$ or 10 or $\frac{21.5(0)}{40 + 20}$ or 215	M1	oe accept working in pounds or pence
	2.15	A1	
	Additional Guidance		
	Condone £2.15p		
	Do not ignore further working eg 2.15 followed by $2.15 \times 4 + 2.15 \times 2 = 12.90$		M1A0
	10 can be implied by $\frac{21.5}{40} \times 4$ or $\frac{21.5}{20} \times 2$		M1

Q	Answer	Mark	Comments
4(a)	-1, 0, 1.8, 2	B2	B1 answer begins -1 or ends 2 SC1 2, 1.8, 0, -1
	Additional Guidance		
	Do not allow misreads for B2		
	Accept extra zeros and 1.8 written as a fraction eg -1, 0, $\frac{9}{5}$, 2.0		B2

Q	Answer	Mark	Comments
4(b)	$\frac{1}{4}, \frac{1}{2}, \frac{7}{8}, 3\frac{1}{10}$	B2	B1 answer begins $\frac{1}{4}$ or ends $3\frac{1}{10}$ SC1 $3\frac{1}{10}, \frac{7}{8}, \frac{1}{2}, \frac{1}{4}$
	Additional Guidance		
	Do not allow misreads for B2		
	Accept correct conversions to equivalent fractions or decimals eg 0.25, $\frac{4}{8}, \frac{7}{8}, 3\frac{1}{10}$		B2
	Do not accept any incorrect working or incorrect conversions for B2 eg1 $\frac{1}{4}, \frac{1}{2}, \frac{7}{8}, 3\frac{1}{10}$ with 3.01 seen in working eg2 $\frac{1}{4}, \frac{1}{2}, \frac{7}{8}, 3.01$		B1 B1
	Condone any incorrect working or incorrect conversions for B1 eg $\frac{1}{4}, 0.3, \frac{1}{2}, \frac{7}{8}$		B1
	Condone correct percentage value without percentage sign for B2 eg $\frac{1}{2} = 50$ is condoned as not incorrect working		

Q	Answer	Mark	Comments
5(a)	4	B1	

Q	Answer	Mark	Comments
5(b)	February	B1	
	Additional Guidance		
	Accept any indication of February eg Feb		B1

Q	Answer	Mark	Comments
5(c)	All five of the following criteria - horizontal bar split at 5 - correct width of bar - overall height of bar is 20 - correct gap from April bar - correct shading or labelling	B2	B1 horizontal bar split at 5 or (Cycle =) 5 or the following four criteria - correct width of bar - overall height of bar is 20 - correct gap from April bar - correct shading or labelling
	Additional Guidance		
	Mark intention		
	Accept Walk bar unshaded		
	Either shading or labelling correct means shading or labelling criteria is met		
	For B2, correct shading or labelling must be Cycle at the bottom of the bar and Walk at the top of the bar		
	For B1, correct shading or labelling must be Cycle at the bottom of the bar and Walk at the top of the bar but not necessarily in a 5 / 15 split		
	Horizontal bar split at 5 can be indicated by correct shading of bar up to 5		
	Cycle = 5 may be implied by a bar drawn to 5 or a line at 5		

Q	Answer	Mark	Comments
6	No and a valid reason	B1	eg No and he will arrive at 7.35 am
	Additional Guidance		
	No can be implied eg 5 minutes late		B1
	No and 7.35		B1
	No and $15 + 20 = 35$		B1
	No and $7.15 + 20 = 35$		B1
	No and leave by 7.10		B1
	No and leave 5 minutes earlier		B1
	No and he's only got 15 minutes		B1
	No and 35 past		B1
	Yes and 5 minutes late		B0
	No and 5 minutes earlier		B0
	No and 15 minutes		B0
	No and 35		B0
	No and will not arrive by 7.30 (no reason given)		B0

Q	Answer	Mark	Comments
7	$20 \div 1.3(0)$ or $[15.3, 15.4]$ or $19.5(0)$	M1	oe
	15 with no incorrect working	A1	
	Additional Guidance		
	$15 \times 1.30 = 19.05$ with answer 15 (incorrect working)		M1A0
	15×1.30 without answer 15		M1A0
	For build up method allow one error but must get above £18.70 eg1 13 14.30 15.60 17 18.30 19.60 and answer of 15 eg2 13 15.30 16.60 17.90 19.20 For build down method allow one error but must get below £1.30 eg3 20 18.70 17.40 16.10 14.60 ... 5.50 4.20 2.90 1.60 0.30		M1A0 M1A0 M1A0

Q	Answer	Mark	Comments
8(a)	23	B1	
	Additional Guidance		
	If answer line is blank, check the output oval for a value		

Q	Answer	Mark	Comments
8(b)	7	B1	
	Additional Guidance		
	If answer line is blank, check the input oval for a value		

Q	Answer	Mark	Comments
9	14×12 or 168 or 2×15 or 30 or $12 \div 10$ or 1.2 or $15 \div 10$ or 1.5	M1	oe
	$14 \times 12 + 2 \times 15$ or $168 + 30$ or 198 or $14 \times 12 \div 10$ or 16.8 or $2 \times 15 \div 10$ or 3	M1dep	oe
	19.8	A1	SC2 17.4
	Additional Guidance		
	SC2 17.4 is from thinking 14 slices includes the 2 crusts		
	Condone answer 20 with 19.8 seen		M1M1A1
	Answer 19 with 19.8 seen		M1M1A0

Q	Answer	Mark	Comments
10(a)	45	B1	

Q	Answer	Mark	Comments
10(b)	Alternative method 1: Expands bracket first		
	$8d - 20$	M1	oe expression eg $8 \times d - 20$
	their $8d = 28 +$ their 20 or $8d = 48$	M1	their 20 cannot be zero
	6	A1ft	ft M0M1 or M1M0
	Alternative method 2: Divides by 4 first		
	$2d - 5 = \frac{28}{4}$ or $2d - 5 = 7$	M1	
	$2d =$ their 7 + 5 or $2d = 12$	M1	their 7 cannot be 28
	6	A1ft	ft M0M1 or M1M0
	Additional Guidance		
	Alt 1 $6d - 5 = 28$ $6d = 33$ $d = \frac{33}{6}$		M0 M1 A1ft
	Alt 2 $2d - 5 = 24$ $2d = 29$ $d = 14.5$		M0 M1 A1ft
	Answer 6 from trial		M1M1A1
	Embedded answer $4(2 \times 6 - 5) = 28$		M1M1A0
	ft answers correct to 1 dp or better		