



GCSE MATHEMATICS 8300/2F

Foundation Tier Paper 2 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)	16	B1	
	Additional Guidance		
	Ignore further terms		

Q	Answer	Mark	Comments
1(b)	-1	B1	
	Additional Guidance		
	Ignore further terms		

Q	Answer	Mark	Comments
1(c)	$\times 2$	B1	oe eg double, multiply by 2, add to itself
	Additional Guidance		
	Times 2		B1
	$2n$		B0
	Ignore any attempt to continue the sequence		

Q	Answer	Mark	Comments
2(a)	13.65	B1	
	Additional Guidance		
	13.65p		B1

Q	Answer	Mark	Comments
2(b)	Alternative method 1		
	$2 + 3.8(0) + 1.75$ or 7.55	M1	oe
	7.55 and No	A1	
	Alternative method 2		
	$7.5(0) - 2 - 3.8(0)$ or $1.7(0)$	M1	oe
	$1.7(0)$ and No	A1	
	Alternative method 3		
	$7.5(0) - 2 - 3.8(0) - 1.75$ or -0.05	M1	oe
	$(-)0.05$ and No	A1	
	Additional Guidance		
	No may be indicated by selecting the box or a statement in the working lines		
	May work in pence		
	In alts 1 and 2 ignore any attempt to evaluate differences once the correct value is seen Eg No ticked and 7.55 seen, followed by he is 0.5 short		M1A1

Q	Answer	Mark	Comments
3(a)	6	B1	
	Additional Guidance		
	Embedded answer without 6 being selected eg $5 \times 6 = 30$		B0

Q	Answer	Mark	Comments
3(b)	12	B1	
	Additional Guidance		
	Embedded answer without 12 being selected eg $-2 + 12 = 10$		B0

Q	Answer	Mark	Comments
3(c)	5	B2	B1 correct partial simplification eg $\frac{20}{4}$ or $\frac{5}{1}$ or $\frac{10w}{2w}$ or $\frac{5w}{w}$ SC1 $5w$
	Additional Guidance		
	Correct partial simplification followed by incorrect further work eg $\frac{10w}{2w}$, Answer $8w$		B1
	Correct answer followed by further work		B1

Q	Answer	Mark	Comments
4(a)	(2, -2)	B1	
	Additional Guidance		
	Condone x and y written above the coordinates		
	Do not condone $(2x, -2y)$		

Q	Answer	Mark	Comments
4(b)	(2, 1)	B1	
	Additional Guidance		
	Condone x and y written above the coordinates		
	Do not condone $(2x, 1y)$		

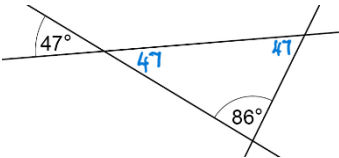
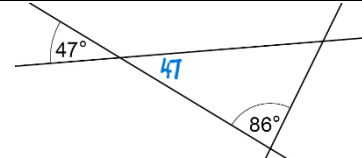
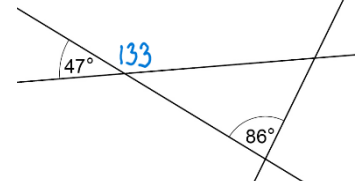
Q	Answer	Mark	Comments
4(c)	Point plotted at (6, 1)	B1	allow missing label
	Additional Guidance		
	Ignore point marked or working for part (b)		
	Mark intention		
	The correctly drawn rhombus implies the point has been plotted correctly		

Q	Answer	Mark	Comments
5(a)	3.8	B1	

Q	Answer	Mark	Comments
5(b)	$(14.2 + 15.1 + 16.5 + 16.7 + 18) \div 5$ or $80.5 \div 5$	M1	oe
	16.1	A1	SC1 66.1
	Additional Guidance		
	Condone missing brackets in working for M1		
	Condone 16 after 16.1 seen		

Q	Answer	Mark	Comments
6(a)	35	B1	

Q	Answer	Mark	Comments
6(b)	$360 - (35 + 160)$	M1	oe
	165	A1	

Q	Answer	Mark	Comments
6(c)	Opposite angle to $47 = 47$ and 3rd angle = 47 and isosceles	B3	B2 opposite angle to $47 = 47$ and 3rd angle = $180 - 47 - 86$ or 47 with type of triangle blank or incorrect B1 opposite angle to $47 = 47$
	Additional Guidance		
	Angles may be seen in the correct places on the diagram for B3, B2 or B1		
	Ignore incorrect spelling of isosceles so long as intention is clear		
	Ignore any reasons stated		
	$180 - 47 - 86$ does not need to be evaluated correctly for B2		
	3rd angle = $(180 - 86)/2 = 47$ does not gain credit unless opposite angle = 47 is also seen		
	Examples of responses:		
	 Answer Isosceles		B3
	Angles in the triangle are both 47 , answer isosceles		B3
	Opposite angles are 47 , $47 + 47 + 86 = 180$, isosceles		B3
	 and $180 - 47 - 86 = 47$ (implies 3rd angle as 1st angle stated in diagram) No triangle type stated		B2
	 and $180 - 47 - 86 = 47$ No reference to any angles inside the triangle		B0
	$47 + 86 = 133$, $180 - 133 = 47$, so isosceles triangle		B0

Q	Answer	Mark	Comments
7	Alternative method 1		
	8×5 or 40 or 3×16 or 48 or 88	M1	oe may be seen by the table
	$\frac{8 \times 5}{4}$ or 10 (days) or $\frac{3 \times 16}{4}$ or 12 (days) or $\frac{8 \times 5 + 3 \times 16}{4}$ or $\frac{88}{4}$	M1dep	oe eg $40 \div 4$ or $10 + 12$ may be embedded eg $\frac{40 + 48}{4}$
	22	A1	SC2 3 weeks and 1 day without 22 seen
	Alternative method 2		
	$8 \div 4$ or 2 or $3 \div 4$ or 0.75	M1	oe may be seen by the table
	$8 \div 4 \times 5$ or 10 (days) or $3 \div 4 \times 16$ or 12 (days)	M1dep	oe eg $10 + 12$
	22	A1	SC2 3 weeks and 1 day without 22 seen
	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		
	Ignore conversion to weeks after 22 days seen		

Q	Answer	Mark	Comments
8	Alternative method 1		
	6×8 or 48 or 4.5×8 or 36 or $6 + 4.5$ or 10.5	M1	oe may be seen on the pictogram implied by 84
	$100 - (\text{their } 36 + \text{their } 48)$ or $100 - 84$ or $100 - \text{their } 10.5 \times 8$ or 16	M1dep	oe one of their 36 and their 48 must be from a correct method may be seen on the pictogram
	2 circles drawn	A1	
	Alternative method 2		
	$6 + 4.5$ or 10.5	M1	may be seen on the pictogram
	$100 \div 8$ or 12.5	M1	
	2 circles drawn	A1	
	Additional Guidance		
	Circles do not need to be aligned		
	Mark intention for size and shape of symbols		
	Build up method may be seen eg $10 \times 8 = 80 + 8 + 8 = 96 + 4 = 100$		M2
	2 circles drawn with no working		M2A1