



GCSE MATHEMATICS 8300/2F

Foundation Tier Paper 2 Calculator
Middle Third

Mark scheme
June 2025

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

Copyright information

AQA retains the copyright on all its publications. However, registered schools/colleges for AQA are permitted to copy material from this booklet for their own internal use, with the following important exception: AQA cannot give permission to schools/colleges to photocopy any material that is acknowledged to a third party even for internal use within the centre.

Copyright © 2025 AQA and its licensors. All rights reserved.

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
10(a)	30	B1	
	Additional Guidance		
	Further work eg $\frac{1}{4} \times 30 = 7.5$		B0

Q	Answer	Mark	Comments
10(b)	$15 \div 6$ or 2.5 or $6 \div 3$ or 2 or $6 \div 15$ or 0.4 or $3 \div 6$ or 0.5 or $\frac{x}{15} = \frac{3}{6}$ or $\frac{x}{15} = 0.5$	M1	oe may be seen on the diagram
	7.5 or $7\frac{1}{2}$ or $\frac{15}{2}$	A1	
	Additional Guidance		
	Accept correct answer unambiguously placed as x on the diagram provided it is not contradicted in the working space.		

Q	Answer	Mark	Comments
11	Alternative method 1: expands brackets and simplifies		
	$7x - 14$ or $15x + 10$	M1	
	$7x - 14 (+ 4x + 6)$ and $11x - 8$ or $15x + 10 (- 4x - 18)$ and $11x - 8$	M1dep	A or B fully correct
	$7x - 14 (+ 4x + 6)$ and $11x - 8$ and $15x + 10 (- 4x - 18)$ and $11x - 8$	A1	A and B fully correct SC1 $11x - 8$ for one or both of A and B with no working seen
	Alternative method 2: shows the x terms and constant terms are the same		
	Any one of $7x + 4x = 11x$ or $15x - 4x = 11x$ or $-14 + 6 = -8$ or $10 - 18 = -8$	M1	
	Any two of $7x + 4x = 11x$ or $15x - 4x = 11x$ or $-14 + 6 = -8$ or $10 - 18 = -8$	M1dep	
	$7x + 4x = 11x$ and $15x - 4x = 11x$ and $-14 + 6 = -8$ and $10 - 18 = -8$	A1	SC1 $11x - 8$ for one or both of A and B with no working seen
	Additional Guidance		
	M1 may be awarded for correct work with no answer or incorrect answer, even if this is seen amongst multiple attempts		
	Use the scheme that favours the student		
	Alt 2: $7x + 4x = 11x$ and $-14 + 6 = -8$		M1M1
	Alt 2: $7x + 4x = 11x$ and $15x - 4x = 11x$		M1M1
	Alt 2: $11x$ only		M0
	Alt 2: -8 only		M0
	Do not ignore subsequent incorrect work such as $11x - 8 = 3$, which may be awarded up to M2 if working shown		
	Substituting values into the two expressions		M0

Q	Answer	Mark	Comments
12	2.2(0) ÷ 4 or 0.55 or $\frac{7}{4}$ or $\frac{4}{7}$ or 0.57(1...)	M1	oe eg 220 ÷ 4 or 55 implied by 385
	3.85	A1	
	Additional Guidance		
	Allow working in pence		
	Answer 3.85p Answer 385p with £ sign crossed out Answer 385p without £ sign crossed out		M1A1 M1A1 M1A0

Q	Answer	Mark	Comments
13(a)	65	B1	

Q	Answer	Mark	Comments
13(b)	Alternative method 1: works with total		
	178×5 or 890 or $(140 + 168 + 205 + 192 + x) \div 5$ or $(705 + x) \div 5$	M1	oe any letter
	their $890 - (140 + 168 + 205 + 192)$ or their $890 - 705$ or $(705 + x) \div 5 = 178$	M1dep	oe
	185	A1	SC2 3 hrs 5 (minutes)
	Alternative method 2: works with differences from new mean		
	$140 - 178$ and $168 - 178$ and $205 - 178$ and $192 - 178$ or -38 and -10 and 27 and 14 or 38 and 10 and -27 and -14	M1	subtractions may be the other way round
	-7 or 7	M1dep	
	185	A1	SC2 3 hrs 5 (minutes)
	Alternative method 3: works from the mean of the 4 given values		
	$178 - (140 + 168 + 205 + 192) \div 4$ or $178 - 705 \div 4$ or $178 - 176.25$ or 1.75 or -1.75	M1	oe eg $4 \times 178 - 705$ subtraction may be the other way round
	$4 \times$ their 1.75 or 7 or -7	M1dep	oe
	185	A1	SC2 3 hrs 5 (minutes)

The Mark scheme for Question 13b continues on the next page

13b cont	Alternative method 4: trial and improvement		
	Trial of any value with mean correctly evaluated	M1	
	Trial of 185 with mean evaluated to 178	M1dep	eg $(140 + 168 + 205 + 192 + 185) \div 5 = 178$
	185	A1	SC2 3 hrs 5 (minutes)
	Alternative method 5: numerical solution of $(140 + 168 + 205 + 192 + x) \div 5 = 178$		
	178 – $(140 + 168 + 205 + 192) \div 5$ or $178 - 705 \div 5$ or $178 - 141$ or 37	M1	oe
	their 37×5	M1dep	oe
	185	A1	SC2 3 hrs 5 (minutes)
	Additional Guidance		
	M1 may be awarded for correct work with no answer or incorrect answer, even if this is seen amongst multiple attempts		
	In alt 4 ignore trials which are not evaluated or are evaluated incorrectly		
	In alt 4 accept if the mean is given to the next or previous integer eg trial of 178 $(140 + 168 + 205 + 192 + 178) \div 5 = 176$ (or 177 or 176.6)		M1
	Accept working in hours and minutes for M2 $178 = 2\text{hrs } 58\text{mins}$ $140 = 2\text{hrs } 20\text{mins}$ $168 = 2\text{hrs } 48\text{mins}$ $205 = 3\text{hrs } 25\text{mins}$ $192 = 3\text{hrs } 12\text{mins}$		
	SC2 is for 185 in hours and minutes		

Q	Answer	Mark	Comments
14	All 4 correct matches $2n$ n^2 $\frac{n}{2}$ $n - 2$	B4	B1 for each correct match
	Additional Guidance		
	Accept any unambiguous indication		
	More than one line from a box on the left is incorrect for that box		

Q	Answer	Mark	Comments
15	Yes with valid working	B1	eg Yes and $6 + 10 + 6 + 10 (= 32)$
	Additional Guidance		
	Yes ticked without valid reason		B0
	Ignore any area calculations		
	Accept any unambiguous indication for ticking a box		
	Neither box ticked but yes implied eg $6 + 10 + 6 + 10$ so it is 32		B1
	Yes ticked and $2 \times (10 + 6) = 32$		B1
	Yes ticked and 2 lots of 10 and 2 lots of 6 make 32		B1
	Yes ticked and $20 + 12 = 32$		B1
	Yes ticked and draws a rectangle indicating the sides are 10 and 10 and 6 and 6 and states 'you add the sides to get the perimeter'		B1
	Yes ticked and draws a rectangle indicating that the sides are 10 and 10 and 6 and 6 with no explanation		B0
	Yes ticked and the sides are 10 and 6 so perimeter is 32		B0
	Yes ticked and because $60 \div 10$ is 6/correct		B0
	Yes ticked and $6 + 10 + 6 + 10$ with an incorrect total		B0

Q	Answer	Mark	Comments
16	$b - 3$ or $-3 + b$	B1	
	Additional Guidance		
	Allow upper case B but not a change of letter eg $a = B - 3$		B1
	$b - + 3$ or $b + -3$		B0
	$3 - b$		B0

Q	Answer	Mark	Comments
17	Alternative method 1: uses values from both A and B		
	Method to find the cost of any mass for either packet or a correct cost stated or Method to find the number of grams for any cost for either packet or a correct mass stated or Method to find the differences between masses and costs or £1.50 and 300g stated	M1	eg $1.1(0) \div 2$ eg $2.6(0) \times 2$ eg $200 \div 1.1(0)$
	Fully correct method or values for two comparable/corresponding masses or costs	M1dep	eg 1.10×5 and 2.60×2 eg $1.10 \div 2$ and $2.60 \div 5$
	Packet B with correct comparable values	A1	eg B and 0.55 and 0.52 eg B and 182 and 192

The mark scheme for Question 17 continues on the next page

17 cont	Alternative method 2: scales up from A or down from B		
	$\frac{2.6}{1.1}$ or 2.36(3...) or 2.364 or $\frac{1.1}{2.6}$ or 0.423(0...) or 0.4231 or $\frac{500}{200}$ or 2.5 or $\frac{200}{500}$ or 0.4	M1	oe
	$\frac{2.6}{1.1} \times 200$ or [472, 473] or $\frac{1.1}{2.6} \times 500$ or [211, 212] or $\frac{500}{200} \times 1.1(0)$ or 2.75 or $\frac{200}{500} \times 2.6(0)$ or 1.04	M1dep	oe
	Packet B and one correct comparable value stated	A1	eg B and 472 eg B and (£)2.75

The Additional Guidance for Question 17 is on the next page

17 cont	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	
	Working may be in pence	
	Two correct comparable values found for 100g followed by incorrect units being stated such as 55p = 1kg and 52p = 1kg and B	M1M1A1
	Alt 1: If comparing, eg cost of 1g of each, there must be enough decimal places to enable a comparison to be made to award the A mark	
	Alt 1: Just repeating £1.10 and 200g or £2.60 and 500g	M0
	Alt 1: Once they have a value from either A or B they may choose to use a value from the difference between the packets for comparison. eg obtains 55p for 100g for packet A £1.50 for 300g (the difference between the two packs) 50p for 100g Packet B	M1 M1 A1
	Some examples of commonly seen answers awarded M1M1A1: B and 55 and 52 (cost in p per 100g) B and 0.0055 and 0.0052 (cost in £s per 1g) B and 5.2 and 5.5 (cost of 1kg of each in £) B and 181.8 and 192.3 (mass per £1 for each) B and 2.75 (cost of 500g of bag A)	

Q	Answer	Mark	Comments
18(a)	1 : 8 or 0.125 : 1	B1	oe eg 0.25 : 2
	Additional Guidance		
	2 : 16		B1
	8 : 1		B0

Q	Answer	Mark	Comments
18(b)	1.2 (: 1)	B2	B1 1.2 <i>a</i> or $\frac{6}{5}$ or $1\frac{1}{5}$ or $6 \div 5$

Q	Answer	Mark	Comments
18(c)	2	B1	accept -2
	Additional Guidance		
	Accept a clear indication that x is 2 if the answer line is blank eg $1 : 2 = 2 : 4$ in the working space		