GCSE

MATHEMATICS

8300/1F

Foundation Tier Paper 1 Non-Calculator

Mark Scheme

June 2024

Version: 1.0 Final

22BG8300/1F/MS

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 rqa.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 ½
[a, b]	Accept values between a and b inclusive.
[a, b)	Accept values $a \leqslant$ value $< b$
3.14 ...	Accept answers which being 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
2	65 min	B1	

Q	Answer	Mark	Comments
3	5 cm	B1	

Q	Answer	Mark	Comments
4	60%	B1	

Q	Answer	Mark	Comments
5	25	B1	

Q	Answer	Mark	Comments
6	$14a + 3b$ *or* $3b + 14a$	B2	B1 for $14a$ or $(+)3b$
	Additional Guidance		
	14a + 3b followed by further work eg 17ab		B2
	B1 response followed by further work eg $2a + 3b = 5ab$		B2

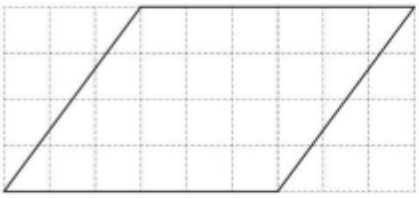
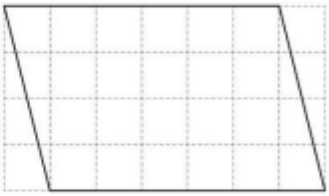
Q	Answer	Mark	Comments
7)a—	40 + 90 – 32 – 38 or 40 + 90 or 130 or 32 + 38 or 70 or 40 – 32 or 8 or 90 – 38 or 52	M1	oe
	60	A1	
	Additional Guidance		
	Check table for working		
	Up to M1 may be awarded for correct work, with no incorrect answer, even if seen amongst multiple attempts		

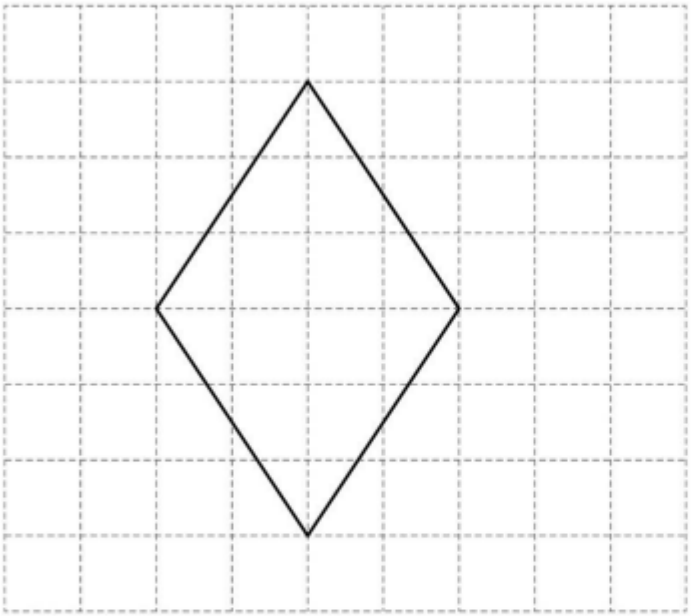
Q	Answer	Mark	Comments
7)b—	Alternative method 2		
	$\frac{40+32}{200}$ or $\frac{72}{200}$ or $\frac{36}{100}$	M1	oe
	Alternative method 3		
	40/200 x 100 or 20/100 or 20 Or 32/200 x 100 or 16/100 or 16 or 36/100	M1	oe
	Alternative method 4		
	(40 + 32) ÷ 2 Or 40 ÷ 2 or 20 Or 32 ÷ 2 or 16	M1	oe eg 72 x 0.5
	36	A1	SC1 64
	Additional Guidance		
	72 out of 200 or 72 ÷ 2		M1
	72% of 200		M0
	Built up method, eg 10% = 20, 5% = 20 ÷ 2 = 10, 1% = 20 ÷ 10 = 2, 10 + 5 + 1 = 16(%) 10% = 20, 5% = 10, 1% = 0.5, 10 + 5 + 0.5 = 15.5(%) (method not shown for 1%)		M1 M0

Q	Answer	Mark	Comments
7	$\frac{1}{5} \times 30$ or $\frac{1}{8} \times 80$ or 10 or $\frac{5}{8} \times 80$	M1	oe
	6 or 50	A1	
	56	A1	SC2 54
	Additional Guidance		
	May be seen as a set of equivalent fraction numerators eg $\frac{1}{5}=\frac{6}{30}$ and $\frac{5}{8}=\frac{10}{16}=\frac{100}{160}=\frac{50}{80}$, $6+50=56$		M1A1A1
	eg $\frac{1}{5}=\frac{6}{30}$ and $\frac{5}{8}=\frac{10}{16}=\frac{100}{160}=\frac{50}{80}$, answer $\frac{56}{110}$		M1A1A0
	6 out of 30 or 50 in 80 56 out of 110		M1A1 M1A1A1
	Up to M1 may be awarded for correct work, with no or incorrect answer, even if seen amongst multiple attempts		

Q	Answer	Mark	Comments
8	$100-(65+19)$ or $100-84$	M1	oe
	16	A1	
	Additional Guidance		
	Embedded answer eg $84+16=100$		M1A0

Q	Answer	Mark	Comments
9(a)	3 or 4 identified or 4 by 3 rectangle drawn on grid or triangle base 4, height 3 drawn on grid	M1	
	12	A1	
	Additional Guidance		
	$\frac{3\times4}{2}$		M1A0
	$3+4+5=12$ (perimeter of triangle, not area of rectangle)		M1A0
	For drawings, mark intention		
	Ignore units		

Q	Answer	Mark	Comments
9(b)	All three of • parallelogram with side as given • no right angles • area 24 cm^2	B2	B1 any two bullet points
	Additional Guidance		
	eg  or 		B2
	Vertices along the bottom edge do not need to be at intersections of gridlines		
	Mark intention for B2 and B1		
	Rectangle with sides 6 cm and 4 cm		B1
	Non right-angled triangle drawn off given line, with vertical height 8 cm		B1
	Trapezium (no right angles) drawn with parallel lines of length 6 cm and 10 cm, vertical height 3 cm		B1
	For those that start again, a horizontal line of 6 cm must be used		

Q	Answer	Mark	Comments
9(c)	Rhombus drawn using given two sides	B1	
	Additional Guidance		
		B1	
	Mark intention of straight lines		
	Ignore diagonals on a correct rhombus		

Q	Answer	Mark	Comments
10(a)	30	B1	

Q	Answer	Mark	Comments
10(b)	6420	B1	

Q	Answer	Mark	Comments
11(a)	60 ÷ 12 or 5 or 12 ÷ 8 or 1.5	M1	oe for repeated addition, allow one error
	40	A1	
	Additional Guidance		
	8 × 5 = 35		M1A0
	60 ÷ (12 ÷ 8)		M1A0

Q	Answer	Mark	Comments
11(b)	4 × 56 or 224 or 10 × 56 or 560 or 6 × 56 or 336 or 2 × 2.7(0) or 5.4(0) or 2.7(0) ÷ 6 or 0.45	M1	oe eg 4 × (0).56 or 2.24
	2.7(0) + their 224 or 494 or their 5.6(0) – their 336 + 2.7(0)	M1dep	oe eg 270 + 4 × 56
	4.94	A1	accept 494p
	Additional Guidance		
	Allow mixed units for up to M1M1dep eg 2.70 + 4 × 56 eg 56 + 56 + 56 + 56 = 224, 224 + 2.70		 M1M1 M1M1
	Condone £4.94p		M1M1A1
	(£)4.5(0) implies 0.45		M1
	Up to M2 may be awarded for correct work, with no or incorrect answer, even if seen amongst multiple attempts		

Q	Answer	Mark	Comments	
11(c)	3 × 3.2(0) or 9.6(0) or 3.2(0) ÷ 2 or 1.6(0) or 4 × 3.2(0) or 12.8(0) or 3.5	M1	oe eg 3 × 320 or 960	
	3 × 3.2(0) + 3.2(0) ÷ 2 or 4 × 3.2(0) – 3.2(0) ÷ 2 or 3.5 × 3.2(0) or 11.2 or 1120	M1dep	oe eg 3 × 320 + 320 ÷ 2 or 7 × 1.6(0)	
	11.20	A1	accept 1120p	
	Additional Guidance			
	Allow mixed units for up to M1M1dep eg 3 × 3.2(0) + 320 ÷ 2			M1M1
	Condone £11.20p			M1M1A1
	Up to M2 may be awarded for correct work, with no or incorrect answer, even if seen amongst multiple attempts			