

8300

GCSE MATHEMATICS

Foundation tier – Questions by Topic – Mark Scheme

Number

Rounding decimals

v1.0

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 within the scheme 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. e.g. accept 0.5 as well as $\frac{1}{2}$
[a, b]	Accept values between a and b inclusive.
3.14...	Allow answers which begin 3.14 e.g. 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.

Q1.	6.92	first answer		B1	
	7.18	second answer		B1	[2]
Q2.	(a) 3.6			B1	
	(b) 0.325 0.5 0.62			B1	
	(c) $\frac{4}{5}$ and 80%				
		B1 for one correct (and one incorrect) or for two correct and one incorrect Any indication		B2	[4]
Q3.	0.47				
		B1 0.46 or 0.469 or 0.4688 or 0.46875 or 0.47 with one or more trailing 0s B1 their 3dp or more value correctly rounded to 2dp		B2	[2]
Q4.	(a) 26.47640(...)			B1	
	(b) 26.5				
		Correct or ft provided their answer to (a) is given to more than 1 dp			
				B1ft	
	Additional Guidance				
	8.88326612 in (a) and 8.9 in (b)			B1ft	
	8.88326612 in (a) and 26.5 in (b)			B1	
	26.50			B0	
					[2]
Q5.	2.8			B1	
	Additional Guidance				
	2.80			B0	[1]

Q6.

6.28

B1

[1]

Q7.

(a) $5\frac{7}{8}$

B1

Additional Guidance

$5\frac{7}{8}$ in working with 5.875 on answer line

B0

(b) 0.476(...) or 0.477

may be implied

B1

0.48

only ft decimal seen with more than 2dp

B1ft

Additional Guidance

Do not accept answers in standard form

Answer 0.48

B1B1

0.47 with no other decimal seen

B0B0

2.098(...) and 2.10

B0B1ft

[3]

Q8.

(a) (0).421875

B1

(b) (0).422

ft any value 4 decimal places or more

B1 ft

[2]

Q9.

(a) 2.17158...

B1

(b) 2.2

ft their answer to (a)

B1ft

[2]

Q10.

69.3

B1 $3.8 \times 6.75 \times 2.7$ oe

or

13 851

200 or 69.25(5) or 69.2(6)

or

correct rounding to 1 dp of a number to 2 dp or more, other than 6.75

B2

Additional Guidance

($3.8 + 6.75 + 2.7 =$) 13.25 and answer 13.3

B1

[2]

Q11.

$20 \div 1.45$

1.45 $\times$ 13 = 18.85 and 1.45 $\times$ 14 = 20.3(0) seen

M1

13.79...

May be implied by 13.8

A1

13.8

ft their answer greater than 1dp

B1ft

[3]

Q12.

$40 \div 1.75$

1.75 $\times$ 22 = 38.5(0) and 1.75 $\times$ 23 = 40.25

M1

22.8...

may be implied by 22.8

A1

22.9

ft their answer greater than 1dp

B1ft

[3]