

8300

GCSE MATHEMATICS

Foundation tier – Questions by Topic – Mark Scheme

Number

Using a written method to divide with 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.

45

B1

Additional Guidance

Mark the answer line. If this is blank, mark the working

If values are given in one or more forms, either on the answer line or in working with nothing on the answer line, all values must be correct

eg1 $\frac{270}{6} = 45$ on answer line

B1

eg2 $\frac{270}{6}$ and $44\frac{5}{6}$ in working with answer line blank

B0

Do not allow unprocessed answers

eg $\frac{270}{6}$

B0

[1]

Q2.

430

*B1 for $6450 \div 15$
or digits 43 eg 0.43 43 000*

B2

[2]

Q3.

(b) 406.23

*Ignore further work e.g rounding
B1 $400 \leq \text{answer} < 410$
B1 digits 40 623 (not 406.23)*

B2

Additional Guidance

0406.23

B2

Ignore trailing zeros eg 406.230000

B2

406.23 in division calculation and 406 on answer line

B2

406.23 in division calculation and 46.23 on answer line cannot be considered a transcription error and cannot be ignored as further work

B1

[4]

Q4.

(b) Attempt to divide 12.6 by 2 or 6.3

M1

32.1

SC1 for 19.2

A1

[2]

Q5.

Alternative method 1

2.14

oe

B1 answer of 2.1(...) except 2.14

B1 0.214 or 21.4 or 214 or 2140

B2

Alternative method 2

Divides by 2, 2 and 3 in any order

or divides by 3 and 4 in either order

or divides by 2 and 6 in either order

oe

Attempts at all divisions must be made using a valid method

M1

2.14

oe

A1

Additional Guidance

$25.68 \div 2 = 12.84$

$25.68 \div 3 = 8.56$

$25.68 \div 4 = 6.42$

$25.68 \div 6 = 4.28$

Use of remainders is B0 e.g. $25.68 \div 12 = 2$ remainder 1.68

B0B0

Do not accept rounding up to 26 or 30 or truncation to 25

e.g. $26 \div 12 = 2.1666\dots$

B0B0

$2\frac{7}{50}$ (possibly from multiplying numerator and denominator by 1000 and cancelling the subsequent fraction)

B2

[2]

Q6.

9

B1

[1]

Q7.

(a) 0.31

oe

eg .31

B1

Additional Guidance

Final answer 31 (even if 0.31 seen in working)

B0

[1]

Q8.

(b) Attempts $3.4 \div 2$ first or 1.7

6.5

SC1 0.5

M1

A1

[2]

Q9.

0.73

B1 0.7(...) or digits 73 seen

B2

Additional Guidance

Condone .73

B2

Condone .7(...)

B1

0.7.3

B1

[2]

Q10.

(a) **Alternative method 1**

$4.5 \times 1.1(0)$

oe

M1

4.5(0) and 0.45

or 450 and 45

or 495

oe

M1dep

4.95

A1

Alternative method 2

$4.5 \times 1.1(0)$

oe

M1

4.4(0) and 0.55

or 440 and 55

or 495

oe

M1dep

4.95

A1

(b) $105 \div 35$

M1

3

A1

[5]