

8300

GCSE MATHEMATICS

Foundation and Higher tier – Questions by Topic – Mark Scheme

Ratio, proportion and rates of change

Calculating with density and pressure

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.

600 g

B1

[1]

Q2.

(a) **Alternative method 1**

7.2 – 4.8 or 2.4

M1

12

A1

Alternative method 2

7.2 – at least eight 0.2s

or 4.8 + at least eight 0.2s

M1

12

A1

Alternative method 3

7.2 ÷ 0.2 or 36

and 4.8 ÷ 0.2 or 24

M1

12

A1

(b) It will take fewer days

oe the answer would be lower

eg it will be less than 12

B1

Additional Guidance

Quicker/faster than 12 days

B1

Quicker/faster alone

B0

[3]

Q3.

g/cm³

B1

[1]

Q4.

$$4320 \div 3.6(0) \quad \text{or} \quad 1200$$

oe

or

$$17.3 \times 3.6(0) \quad \text{or} \quad 62.28$$

cost per cubic centimetre

M1

their $1200 \div 17.3$

mass $\div$ density

or

$$4320 \div \text{their } 62.28$$

total cost $\div$ cost per cubic centimetre

or

$$69.3(6\dots) \quad \text{or} \quad 69.4$$

M1dep

$$(r^3 =) \text{ their } 69.3 \times \frac{3}{4} \div \pi$$

$$\text{or } [16.5, 16.6]$$

oe

dep on M2

M1dep

$$[2.5, 2.55]$$

A1

[4]

Q5.

18.9 ÷ 0.45 or 42

oe

M1

their 42 ÷ 7 × 8 or 48

oe eg $\frac{8}{7} \times \text{their } 42$
or $[1.14, 1.143] \times \text{their } 42$

M1dep

0.45 ÷ 9 × 5 or 0.25

oe eg $\frac{5}{9} \times 0.45$ or $[0.55, 0.56] \times 0.45$
 $\frac{8}{7} \times \frac{5}{9} \times 18.9$ oe scores M3

M1

12

A1

Additional Guidance

Up to M3 may be awarded for correct work with no, or incorrect answer, even if this is seen amongst multiple attempts

Any single calculation or set of calculations that are a correct method and lead to 12

M3

Note that the single calculation $\frac{8}{7} \times \frac{5}{9} \times 18.9$ does not use 0.45

M3

An oe for $\frac{8}{7} \times \frac{5}{9} \times 18.9$ is $\frac{8}{7} \times \frac{18.9}{0.45} \times \frac{5}{9} \times 0.45$

M3

Values may be seen in ratios eg 42 : 48

M1M1

[4]

Q6.

Alternative method 1

198×0.45 or 89.1

M1

their 89.1 $\div 6.25$

their 89.1 must come from a division or multiplication using 198 and 0.45 only

M1

14.256 or 14.26 or 14.3

SC1 556.875 or 556.88 or 556.9 or 70.4

A1

Alternative method 2

$198 \div 6.25$ or 31.68

M1

their 31.68 $\times 0.45$ *their 31.68 must come from a division or multiplication using 198 and 6.25 only*

M1

14.256 or 14.26 or 14.3

SC1 556.875 or 556.88 or 556.9 or 70.4

A1

Alternative method 3

$0.45 \div 6.25$ or 0.072

M1

$198 \times$ their 0.072

M1dep

14.256 or 14.26 or 14.3

SC1 556.875 or 556.88 or 556.9 or 70.4

A1

Alternative method 4

$6.25 \div 0.45$

or 13. $\dot{8}$ or 13.8(...) or 13.9

M1

$198 \div$ their 13. $\dot{8}$

M1dep

14.256 or 14.26 or 14.3

SC1 556.875 or 556.88 or 556.9 or 70.4

A1

Additional Guidance

$198 \times 0.45 \div 6.25$ oe

M1M1

$198 \times 0.45 \times 6.25$ (which gives 556.875)

M1M0

$198 \div 0.45 \div 6.25$ (which gives 70.4)

M0M1

$198 \div 0.45 \times 6.25$ (which gives 2750)

M0M0

Do not allow 6.25^2 for 6.25

eg $198 \div 6.25 \div 6.25$

M0

Ignore rounding or truncation after correct answer seen

[3]

Q7.

$$2625 \div 250$$

or

$$2.625 \div 250$$

or

$$2625 \div 0.000\ 25$$

or

answer with digits 105

$$\begin{array}{r} 2.625 \times 1000 \\ \hline 250 \end{array}$$

oe eg

M1

10.5

oe

A1

Additional Guidance

Digits 105 may have additional zeros before 1 or after 5

eg1 0.000 105

M1A0

eg2 10 500

M1A0

eg3 10.05

M0A0

[2]

Q8.

Alternative method 1: population density of Town A

$$84\,000 \div (7 \times 2.6)$$

or [4615, 4616]

oe

M1 $84\,000 \div 7$ or $12\,000$ oe

or 7×2.6 or 18.2 oe

M2

Town B and [4615, 4616]

A1

Alternative method 2: comparing one square mile of population

$$84\,000 \div 7 \text{ or } 12\,000$$

oe

M1

$$4695 \times 2.6 \text{ or } 12\,207$$

oe

M1

Town B and 12 000 and 12 207

A1

Alternative method 3: comparing seven square miles of population

$$4695 \times 2.6 \times 7$$

or 85 449

oe

M1 4695×2.6 or $12\,207$ oe

or 7×2.6 or 18.2 oe

M2

Town B and 85 449

A1

Alternative method 4: comparing areas with equal populations

$$7 \times 2.6 \text{ or } 18.2$$

oe

M1

$$84\,000 \div 4695$$

or [17.89, 17.9] or 18

oe

M1

Town B and 18.2

and [17.89, 17.9] or 18

A1

[3]

Q9.

(a) $\frac{4}{3} \times \pi \times 3 \times 3 \times 3$
oe

M1

[113, 113.1] or 36π

A1

(b) $\frac{4}{3} \times \pi \times 3 \times 3 \times 3 \times 5.2$
or their [113, 113.1] $\times 5.2$
or $36\pi \times 5.2$

oe
ft their (**a**)

M1

[588.10, 588.12] or $\frac{936}{5}\pi$
or 588(.1...)

A1ft

oe
ft their (**a**)

[4]

Q10.

0.09×0.4536 or 0.0408(24)

or

$0.09 \times 0.4536 \times 1000$ or 40.82(4)

M1

2.54^3 or 16.3879(064)

oe

M1

their $0.0408 \times 1000 \div$ their 16.3879

or

their $40.82 \div$ their 16.3879

dep on M1M1

M1dep

[2.49, 2.5]

A1

[4]

Q11.

$0.5 \times 10 \times 12$ or 60

oe

M1

$180 \div$ their 60

M1dep

3

SC1 1.5 oe

A1

[3]

Q12.

6 as density for J or K

B1

13 as volume for K

or

78 ÷ their 6 as volume for K

ft their 6

B1ft

g/cm³ as units for densities of J and K

and

cm³ as unit for volume of K

allow g cm⁻³

B1

Additional Guidance

Mark table first

Full marks are only awarded for a fully correct table with no errors or omissions

13 cm³ as a volume for K, 0.006 kg/cm³ for both densities

B1B1B1

Condone g per cm³, gpcm³ or g per cubic centimetre as units for density

[3]

Q13.

(a) $\sqrt{784}$ or 28

M1

(their 28)³ or 21 952

21 952 implies M1M1

M1dep

10.976 ÷ their 21 952 or 0.000 5

or

digits 10 976 ÷ their 21 952

oe eg 5 × 10⁻⁴

eg 1097.6 ÷ their 21 952

M1dep

0.5

oe

A1

Additional Guidance

784 × 6 or 784 ÷ 6 or 784 ÷ 2

M0M0M0A0

(b) It is less than the answer to part (a)

B1

[5]

Q14.

8×10 or 80

or

$0.5 \times 8 \times (14 - 10)$

or $0.5 \times 8 \times 4$ or 16

or

8×14 or 112

oe

may be seen in an incorrect attempt to calculate the

$\frac{9450}{112}$

population eg

M1

$8 \times 10 + 0.5 \times 8 \times (14 - 10)$

or $8 \times 10 + 0.5 \times 8 \times 4$

or $80 + 16$

or

$8 \times 14 - 0.5 \times 8 \times (14 - 10)$

or $8 \times 14 - 0.5 \times 8 \times 4$

or $112 - 16$

or

$0.5 \times (10 + 14) \times 8$

or 96

oe

may be seen in an incorrect attempt to calculate the

$\frac{9450}{96}$

population eg

M1dep

their 96×9450

oe

their 96 must be from a calculation using at least two of 8, 10 and 14

M1

907 200

A1

Additional Guidance

The first M1 may be awarded for a correct partial area even if this is seen amongst multiple attempts

eg1 $(8 + 10 + 14) \times 9450 = 302\,400$

M0M0M1A0

eg2 $32 \times 9450 = 302\,400$ (working not seen)

M0M0M0A0

[4]

Q15.

72 N

B1

[1]

Q16.

$$\frac{4}{3} \times \pi \times 3^3 \text{ or } [113, 113.2]$$

or

M1

$$85 \div \text{their } [113, 113.2]$$

$$\text{or } 85 \div 36\pi$$

M1

$$0.75... \text{ or } 0.8$$

A1

[3]

Q17.

Alternative method 1

$$0.8 \times 0.48 \times 20 \text{ or } 7.68$$

Units need not be consistent here

M1

$$0.5 \times 0.35 \times 20 \text{ or } 3.5$$

Units need not be consistent here

M1

$$7.68 - 3.5 \text{ or } 4.18$$

M1

$$(4.18 \times 7.9 =)$$

$$[33.0, 33.2]$$

A1

Alternative method 2

$$80 \times 48 \times 2000 \text{ or } 7\,680\,000$$

Units need not be consistent here

M1

$$50 \times 35 \times 2000 \text{ or } 3\,500\,000$$

Units need not be consistent here

M1

$$(7\,680\,000 - 3\,500\,000) \div 1\,000\,000 \text{ or } 4.18$$

M1

$$(4.18 \times 7.9 =)$$

$$[33.0, 33.2]$$

A1

Alternative method 3

$$0.8 \times 0.48 \text{ or } 0.384$$

$$\text{and } 0.50 \times 0.35 \text{ or } 0.175$$

oe

M1

$$0.8 \times 0.48 - 0.50 \times 0.35 \text{ or } 0.209$$

oe

M1dep

$$\text{their } 0.209 \times 20 \text{ or } 4.18$$

Units must be consistent here

M1

$$(4.18 \times 7.9 =)$$

$$[33.0, 33.2]$$

A1

Alternative method 4

$80 \times 48 \text{ or } 3840$

$\text{and } 50 \times 35 \text{ or } 1750$

*oe***M1**

$80 \times 48 - 50 \times 35 \text{ or } 2090$

*oe***M1dep**

$\text{their } 2090 \div 1000 \times 20 \text{ or } 4.18$

*Units must be consistent here***M1**

$(4.18 \times 7.9 =)$

$[33.0, 33.2]$

A1**[4]****Q18.**

$$(a) \quad \frac{4}{3} \times \pi \times 9 \times 9 \times 9$$

oe

M1

$[3052, 3054.1] \text{ or } 3050 \text{ or } 972\pi$

A1

$$(b) \quad \frac{4}{3} \times \pi \times 9 \times 9 \times 9 \times 7.8$$

or their $[3052, 3054.1] \times 7.8$
 or 3050×7.8
 or $972\pi \times 7.8$

oe

M1

$$[23\,805, 23\,822] \text{ or } \frac{37908}{5} \times \pi$$

or 23 790
 or 23 800

*oe**ft their (a)***A1ft****[4]**

Q19.

(a) $\frac{1}{2} (13 + 10) \times 12$ or 138
or
 $\frac{1}{2} \times 10 \times 8$ or 40
oe

M1

$\frac{1}{2} (13 + 10) \times 12$ or 138
and
 $\frac{1}{2} \times 10 \times 8$ or 40
or
178
oe

M1dep

$25 \div (\text{their } 138 + \text{their } 40)$
oe

M1dep

0.14(0...)

A1

(b) less than
and
valid reason

eg less than and you should be dividing by a bigger number
or
less than and the (actual) area is bigger
B1 less than

B2

Additional Guidance

If no box is ticked, condone if less than is clearly stated in working lines
Wrong box or > 1 box ticked

B0

less than and he has not included all the base

B2

less than and it doesn't cover 100% of the base

B2

less than and it doesn't include the parts outside the areas

B2

less than and the area is an underestimate

B2

less than and it is an underestimate

B1

less than and it is only an estimate

B1

less than and the answer to (a) is not the exact area

B1

[6]

Q20.

Alternative method 1

$$3.6 \times 1000 \text{ or } 3600$$

M1

their 3600

$$\frac{512}{7.87} \text{ or } 7(.0\dots)$$

or

their 3600

$$\frac{7.87}{512} \text{ or } 457(.4\dots)$$

oe

M1dep

7(.0...) and No

or

457(.4...) and No

A1

Alternative method 2

$$3.6 \times 1000 \text{ or } 3600$$

M1

$$7.87 \times 512 \text{ or } 4029(.4\dots)$$

oe

M1

4029(.4...) and 3600 and No

A1

Alternative method 3

3.6

$$\frac{512}{7.87} \text{ or } 0.007(0\dots)$$

or

3.6

$$\frac{7.87}{512} \text{ or } 0.457(4\dots)$$

oe eg $7(.0\dots) \times 10^{-3}$

M1

their $0.007(0\dots) \times 1000$ or $7(.0\dots)$

or

$0.457(4\dots) \times 1000$ or $457(.4\dots)$

oe

M1dep

7(.0...) and No

or

457(.4...) and No

A1

Alternative method 4

$7.87 \div 1000$ or 0.00787

or

7.87×512 or $4029(.4\dots)$

M1

their 0.00787×512

or their $4029(.4\dots) \div 1000$

or $4(.0\dots)$

or

$\frac{3.6}{\text{their } 0.00787}$ or $457(.4\dots)$
oe

M1dep

$4(.0\dots)$ and No

or

$457(.4\dots)$ and No

A1

Alternative method 5

$\frac{3.6}{512}$ or $0.007(0\dots)$

oe eg $7(.0\dots) \times 10^{-3}$

M1

$7.87 \div 1000$ or 0.00787

oe

M1

$0.007(0\dots)$ and 0.00787 and No

A1

Additional Guidance

Up to M2 may be awarded for correct work, with no or incorrect answer, even if this is seen amongst multiple attempts

In Alt 2 and Alt 5 the 2nd mark is not dependent

In Alt 1, Alt 3 and Alt 4 the 2nd mark is dependent

$7.87 \times 512 = 1\,056\,293\,519$

M1

7.87×512^3 or $3.6 \div 512^3$ unless recovered

M0

[3]

Q21.

(a)

$$\frac{1}{3} \times 8 \times 8 \times 16 \text{ or } \frac{1024}{3}$$

or 341.3...

or

$$\frac{1}{3} \times 5 \times 5 \times 10 \text{ or } \frac{250}{3}$$

or 83.3...

oe

M1

$$\frac{1}{3} \times 8 \times 8 \times 16 - \frac{1}{3} \times 5 \times 5 \times 10 \\ = 258$$

or

$$\frac{1024}{3} - \frac{250}{3} = 258$$

or

$$341.3... - 83.3... = 258$$

oe

$$\text{eg } \frac{1024}{3} - 258 = \frac{250}{3}$$

must see method or values for both pyramids

*must use same number of decimal places for both pyramids so
their answer is exactly 258*

A1

Additional Guidance

$$341.3 - 83.3 = 258$$

M1A1

$$341.33 - 83.3 = 258.03$$

M1A0

$$341 - 83 = 258 \text{ with no correct method seen}$$

M0A0

(b) $2340 = 7.5 \times V$

or

$$\frac{2340}{7.5} \text{ or } 312$$

or

$$2340 - (7.5 \times 258) \text{ or } 2340 - 1935$$

$$\text{or } 405$$

oe

M1

$$54$$

A1

[4]

Q22.

(a) 2400×3.8

or $\frac{m}{3.8} = 2400$ or $\frac{m}{2400} = 3.8$

oe equation

allow mass for m

allow any letter apart from v or d

M1

9120

A1

(b) $\pi r^2 h = 3.8$

or

$\pi \times 0.5^2 \times h$ or $0.25\pi h$

or $[0.78, 0.79]h$

or

$3.8 \div (\pi \times 0.5^2)$ or $3.8 \div 0.25\pi$

or $3.8 \div [0.78, 0.79]$

oe eg $\pi r^2 = \frac{3.8}{h}$

M1

$[4.8, 4.841]$

A1

Additional Guidance

$\pi 0.5^2 h$

M1

[4]

Q23.

$9.5 \div 2 (= 4.75)$

or $19 \times 2 (= 38)$

or $9.5 \div 19 (= 0.5)$

M1

$57 \div 3 (= 19)$

or $19 \times 3 (= 57)$

or $57 \div 19 (= 3)$

M1

$76 \div 4 (= 19)$

or $19 \times 4 (= 76)$

or $76 \div 19 (= 4)$

M1

A with full verification

eg A and 4.75 (19 and 19) Checking density

or A and 38 (57 and 76) Checking masses

or A and 0.5 (3 and 4) Checking volumes

A1

[4]

Q24.

7.5×0.4536 or 3.402

or

$7.5 \times 0.4536 \times 1000$ or 3402

M1

2.54^2 or 6.4516

oe

M1

their $3.402 \times 1000 \div$ their 6.4516

or

their $3402 \div$ their 6.4516

Dep on M1 M1

M1dep

527.(...)

A1

[4]

Q25.

(a) $10 \times 10 \times 4$ or 400

M1

their 400×25 or 10 000

M1

$\frac{4}{3} \times \pi \times 6^3$ or 904.(7...) or 905
oe

M1

their 10 000 $\div$ their $\frac{4}{3} \times \pi \times 6^3$

Must have come from use of volume of a sphere formula

M1

11.0(5...)

A1

11

ft any correctly rounded down number

B1 ft

(b) $500 \div$ their $10 \times 10 \times 4$

or $500 \div$ their 400

ft their $10 \times 10 \times 4$ from (a)

M1

1.25

oe $\frac{5}{4}$

A1

[8]

Q26.

342.5 or 347.5

Allow 347.49 for 347.5

B1

6.35 or 6.45 or 2.55 or 2.65

Allow 6.449 for 6.45

Allow 2.649 for 2.65

B1

their $6.35 \times$ their 2.55 or 16.1925

Must use their lower bounds for lengths

their 6.35 must be [6.3, 6.4)

their 2.55 must be [2.5, 2.6)

M1

their $347.5 \div$ their 16.1925

Must use their upper bound for force

their 347.5 bound must be (345, 350]

M1dep

21.46

Must come from $347.5 \div (6.35 \times 2.55)$

or 347.49 $\div (6.35 \times 2.55)$

A1

Additional Guidance

$347.49 \div (6.35 \times 2.55) = 21.46$

B0B1M1M1A0

21.4... or 21.5 does not score any marks if no working is seen

[5]

Q27.

12.5 or $12\frac{1}{2}$ or $\frac{25}{2}$

B1

N/m² or newtons per square metre

or Nm⁻² or pascals or Pa

oe

B1

Additional Guidance

m²/N or P

B0

[2]

Q28.

Alternative method 1

30×0.45 or 13.5

M1

their $13.5 \div 2.54^2$

oe eg
$$\frac{30 \times 0.45}{2.54^2}$$

M1dep

2.09(2...) or 2.093 or 2.1

SC1 5.31(4...) or 5.315 or 5.3

A1

Alternative method 2

$30 \div 2.54^2$ or 4.65(0...)

oe

M1

their $4.65(0...) \times 0.45$

oe eg
$$\frac{30}{2.54^2} \times 0.45$$

M1dep

2.09(2...) or 2.093 or 2.1

SC1 5.31(4...) or 5.315 or 5.3

A1

Alternative method 3

$0.45 \div 2.54^2$

or 0.0697(5...) or 0.0698

oe

M1

their $0.0697(5...) \times 30$

oe eg
$$\frac{0.45}{2.54^2} \times 30$$

M1dep

2.09(2...) or 2.093 or 2.1

SC1 5.31(4...) or 5.315 or 5.3

A1

Additional Guidance

SC1 when 2.54 is used and not 2.54^2

[3]

Q29.

kg/m^3

B1

[1]

Q30.

Alternative method 1

45 ÷ (22 + 3) or 45 ÷ 25 or 1.8

$$\text{oe eg } \frac{45}{25}$$

M1

22 × their 1.8 or 39.6

or

3 × their 1.8 or 5.4

M1dep

their 39.6 × 8.96 + their 5.4 × 7.31

or [354, 355] + [39, 40]

M1dep

394.29 or 394.3

A1

Alternative method 2

45 ÷ (22 + 3) or 45 ÷ 25 or 1.8

$$\text{oe eg } \frac{45}{25}$$

M1

their 1.8 × 8.96 or [16.1, 16.13]

or

their 1.8 × 7.31 or [13.1, 13.2]

M1dep

their [16.1, 16.13] × 22

+ their [13.1, 13.2] × 3

or [354, 355] + [39, 40]

M1dep

394.29 or 394.3

A1

Alternative method 3

45 ÷ (22 + 3) or 45 ÷ 25 or 1.8

$$\text{oe eg } \frac{45}{25}$$

M1

22 × 8.96 or [197, 197.12]

or]

3 × 7.31 or [21.9, 22]

M1

their [197, 197.12] × their 1.8

+ their [21.9, 22] × their 1.8

or [354, 355] + [39, 40]

oe

dep on M1M1

M1dep

394.29 or 394.3

A1

Additional Guidance

Allow up to M2 even if not subsequently used

Ignore units throughout

[4]

Q31.

Alternative method 1

$158460 \div 278$ or 570

M1

$168720 \div$ their 570

M1dep

296

A1

Alternative method 2

$158460 \div 168720$

or $0.939\dots$ or 0.94

M1

$278 \div$ their $0.939\dots$

M1dep

296

A1

Alternative method 3

$168720 \div 158460$

or $1.0647\dots$ or 1.065 or 1.06

$$\begin{array}{r} \text{oe eg} \quad 1 + \frac{168720 - 158460}{158460} \\ \text{or} \quad 1 + \frac{10260}{158460} \end{array}$$

M1

$278 \times$ their $1.0647\dots$

M1dep

296

A1

Additional Guidance

$278 \times 1.065 = 296$

M1M1A1

$278 \times 1.065 = 296.07$ with 296 on answer line is evidence of premature rounding in their working

M1M1A0

$168720 \div 158460 = 1.06$, $278 \times 1.06 = 294.68$ with answer 294

M1M1A0

Embedded answer eg $168720 \div 296 = 570$

M1M1A0

[3]