GCSE
MATHEMATICS
8300/3F

Foundation Tier Paper 3 Calculator

Mark scheme

June 2021

Version: 1.0 Final

2 1 6 G 8 3 0 0 / 3 F / M S

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 aqa.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 $\frac{1}{2}$
[a, b]	Accept values between a and b inclusive.
[a, b)	Accept values $a \leq$ 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.

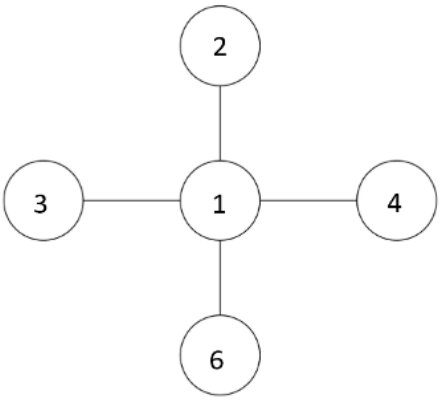
Q	Answer	Mark	Comments
1	$x = 8$	B1	

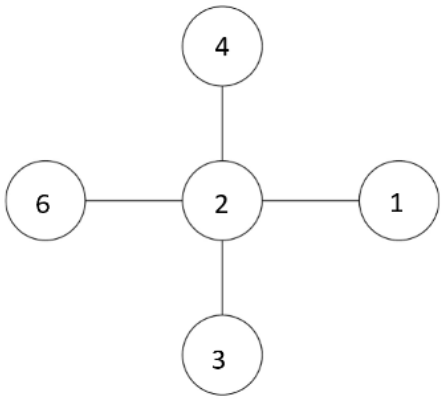
Q	Answer	Mark	Comments
2	4.56	B1	

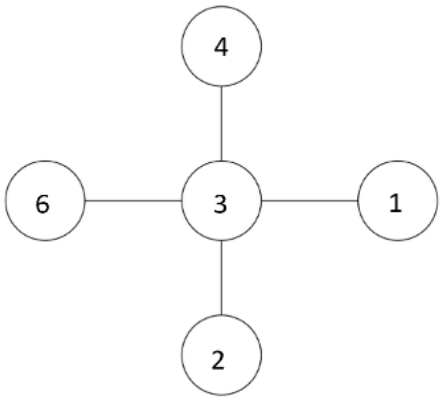
Q	Answer	Mark	Comments
3	$\frac{x}{2}$	B1	

Q	Answer	Mark	Comments
4	one million	B1	

<table>
<tr><th>Q</th><th>Answer</th><th>Mark</th><th>Comments</th></tr>
<tr><td rowspan="8">5</td><td>2827.18</td><td>B1</td><td></td></tr>
<tr><td>2778.21</td><td>B1ft</td><td>ft their 2827.18 – 48.97</td></tr>
<tr><td>1135.72</td><td>B1ft</td><td>ft their 2778.21 – 1642.49</td></tr>
<tr><td colspan="3">Additional Guidance</td></tr>
<tr><td colspan="2">
<table>
<tr><th>Date</th><th>Description</th><th>Credit (£)</th><th>Debit (£)</th><th>Balance (£)</th></tr>
<tr><td>01/05/2020</td><td>Starting balance</td><td></td><td></td><td>670.43</td></tr>
<tr><td>08/05/2020</td><td>Salary</td><td>2156.75</td><td></td><td>2827.18</td></tr>
<tr><td>11/05/2020</td><td>Water bill</td><td></td><td>48.97</td><td>2778.21</td></tr>
<tr><td>18/05/2020</td><td>Mortgage payment</td><td></td><td>1135.72</td><td>1642.49</td></tr>
</table>
</td><td>B1B1B1</td></tr>
<tr><td colspan="2">All three correct B1 values must be in the correct place for B1B1B1</td><td></td></tr>
<tr><td colspan="2">2827.18 and 2778.21 and 1135.72 but not all of them in the correct place can only score 2 marks</td><td></td></tr>
<tr><td colspan="2">Condone £ and p on values</td><td></td></tr>
<tr><td colspan="2">Condone incorrect money notation for ft eg 2827.27 – 48.97 = 2778.3</td><td>B0B1ft</td></tr>
</table>

<table>
<tr><th>Q</th><th>Answer</th><th>Mark</th><th>Comments</th></tr>
<tr><td rowspan="6">6</td><td> 
</td><td>B2</td><td>2 and 6 can be in either order
3 and 4 can be in either order

B1
the horizontal line multiplies to 12
or
the vertical line multiplies to 12
or
the sum of the vertical line is 1 more than the sum of the horizontal line
or
the sum of the horizontal line is 1 more than the sum of the vertical line</td></tr>
<tr><td colspan="3">Additional Guidance</td></tr>
<tr><td colspan="2">Must use 1, 2, 3, 4 and 6 each once and all circles must be completed</td><td></td></tr>
<tr><td colspan="2">Examples of B1
 

 
</td><td>B1</td></tr>
<tr><td colspan="2">Use of a repeated number</td><td>B0</td></tr>
</table>

Q	Answer	Mark	Comments
7	**Alternative method 1**		
	217 – 145 or 72	M1	
	their 72 + 59	M1dep	oe eg 72 – –59
	131	A1	
	Alternative method 2		
	217 + 59 or 276	M1	oe eg 217 – –59
	their 276 – 145	M1dep	
	131	A1	
	Additional Guidance		
	M1 may be awarded for correct work, with no or incorrect answer, even if this is seen amongst multiple attempts		
	217 – 145 + 59 or 217 – 86		M1M1
	217 + 145 + 59		M1M0
	217 – 145 – 59		M1M0
	217 – 204 implies 217 – 145		M1M0
	145 – 59 or 86 without further correct working		M0

Q	Answer	Mark	Comments
8(a)	5 + 6 – 2 – 8 or 5 + 6 – 8 – 2 or 6 + 5 – 2 – 8 or 6 + 5 – 8 – 2	B1	

Q	Answer	Mark	Comments
8(b)	All ten correct pairs, ie 2, 6 6, 2 2, 8 8, 2 5, 6 6, 5 5, 8 8, 5 6, 8 8, 6	B2	B1 at least 5 correct pairs
	Additional Guidance		
	Condone duplication of 2, 5 and 5, 2 for B2		
	Condone duplications for B1 with at least 5 different correct pairs		

Q	Answer	Mark	Comments
8(c)	$\frac{3}{4}$ or $\frac{9}{12}$	B1ft	oe fraction, decimal or percentage correct answer or ft their table in (b)
	Additional Guidance		
	Answer may come from considering the four cards or from their table		
	Ignore attempts to convert a correct fraction		
	Ignore probability words		
	9 out of 12 or 9 in 12 together with a correct answer		B1
	9 out of 12 or 9 in 12 alone		B0
	9 : 12 with a correct answer		B0

Q	Answer	Mark	Comments
9	72 × 28 or 2016 or 16 × 18 or 288	M1	oe
	$\frac{72\times28}{16\times18}$ = 7 or 2016 and 288 and 7	A1	oe
	Additional Guidance		
	Ignore further work alongside a correct answer		

Q	Answer	Mark	Comments
10	**Alternative method 1**		
	3.25 ÷ 25 or 0.13 or 325 ÷ 25 or 13 or 5 ÷ (2 × 25) or 5 ÷ 50 or 0.1(0) or 500 ÷ (2 × 25) or 500 ÷ 50 or 10	M1	oe cost of a chocolate in a single box cost of a chocolate from special offer
	3.25 ÷ 25 – 5 ÷ (2 × 25) or their 0.13 – their 0.1(0) or 0.03 or 325 ÷ 25 – 500 ÷ (2 × 25) or their 13 – their 10	M1dep	oe their 0.13 and their 0.1(0) must come from correct methods their 13 and their 10 must come from correct methods
	3	A1	condone £0.03 on answer line
	Alternative method 2		
	2 × 3.25 – 5 or 6.5(0) – 5 or 1.5(0) or 2 × 325 – 500 or 650 – 500 or 150	M1	difference in cost of two boxes
	their 1.5(0) ÷ (2 × 25) or 0.03 or their 150 ÷ (2 × 25)	M1dep	oe 1.5(0) ÷ 50 oe 150 ÷ 50
	3	A1	condone £0.03 on answer line
	Alternative method 3		
	3.25 – 5 ÷ 2 or 3.25 – 2.5(0) or 0.75 or 325 – 500 ÷ 2 or 325 – 250 or 75	M1	difference in cost of one box
	their 0.75 ÷ 25 or 0.03 or their 75 ÷ 25	M1dep	
	3	A1	condone £0.03 on answer line

Q	Answer	Mark	Comments
11(a)	B2, C5, E3, D5	B2	B1 4 correct with at most 2 incorrect or any 2 or 3 correct with at most 1 incorrect or any 1 correct with none incorrect or no written answer, but all 4 correct marked on diagram with none incorrect
	Additional Guidance		
	Only mark the diagram with no written answer or 4 on answer line		
	4 on answer line with all 4 correct marked on diagram		B2
	Ignore B3 repeated		
	Ignore repetition of correct answers		
	Condone eg 5C, 5,C, C,5, (5,C), (C,5) for B2 and B1		
	B2, 5C, (E,3), 5,D, B3		B2

Q	Answer	Mark	Comments
11(b)	$\frac{1}{36}$ or 0.027(…) or 0.028 or 2.7(…)% or 2.8%	B1	oe
	Additional Guidance		
	Ignore attempts to convert a correct fraction		
	Ignore probability words		
	1 out of 36 or 1 in 36 together with a correct answer		B1
	1 out of 36 or 1 in 36 alone		B0
	1 : 36 with a correct answer		B0

Q	Answer	Mark	Comments
11(c)	It is greater than the answer to part (b) with valid reason	B1	eg now there are 4 squares to choose from (it is) $\frac{1}{4}$ or (it is) $\frac{9}{36}$
	Additional Guidance		
	Ignore incorrect statements alongside correct statements		
	Ignore any repeated incorrect probability from part (b), but a probability for part (c), if shown, must be correct		
	No box ticked and 'it is greater as there are 4 corners'	B1	
	She is restricted to a smaller number of options	B1	
	Only four squares to choose from	B1	
	Fewer boxes	B1	
	The lower the denominator the higher the chance	B1	
	There are less squares to choose from	B1	
	There are 4 corners so it is 1 in 4	B1	
	There are 4 chances to put it in a corner	B1	
	There are 3 other boxes she can put it in	B1	
	(It's now a) 1 in 4 (chance)	B1	
	There are more corner squares or There are more corners	B0	
	There are 4 more corners she can put the cross	B0	
	She's more likely to put it in a corner square	B0	
	There's a greater chance for F6	B0	
	Because there are 4 corners, so it is $\frac{4}{36}$ (incorrect probability)	B0	
	There are only 4 corner squares to choose from so it's 1:4	B0	
	There are 4 chances to put it in a corner so it is 1 in 9	B0	
	Because it's a corner square	B0	

Q	Answer	Mark	Comments
12	2 (cm) and 8 (cm) seen or [3.54, 4.56] or 3 ÷ [1.8, 2.2] or [1.36, 1.67] or [1.8, 2.2] ÷ 3 or [0.6, 0.74]	M1	each ± 2 mm implied by whale divided into four sections or $\frac{1}{4}$ of the whale oe
	[10.6, 13.7]	A1	working for M1 must be seen SC1 [10.6, 13.7] with no or insufficient working
	Additional Guidance		
	2:8 and 3:12 on answer line		M1A0

Q	Answer	Mark	Comments
13(a)	$0.5 \times 2.6 \times 9.8$	M1	oe eg 1.3×9.8 or 2.6×4.9
	12.7(4)	A1	
	Additional Guidance		
	Accept 13 with M1 awarded		M1A1

Q	Answer	Mark	Comments
13(b)	$\pi \times 11.5^2$	M1	oe accept [3.14, 3.142] for π
	[415, 416] or $\frac{529}{4}\pi$ or 132.25π	A1	oe
	Additional Guidance		
	Accept $\frac{529}{4} \times \pi$ or $132.25 \times \pi$ or $\pi \times \frac{529}{4}$ or $\pi \times 132.25$		M1A1
	Condone $\pi\frac{529}{4}$ or $\pi 132.25$		M1A1

Q	Answer	Mark	Comments
14(a)	252 000	B4	B3 60 × 60 × 8 ÷ 4 × 35 oe B2 60 × 60 × 8 ÷ 4 oe or 7200 or 60 × 60 × 8 × 35 oe or 1 008 000 or 60 × 60 ÷ 4 × 35 oe or 31 500 or 60 × 8 ÷ 4 × 35 oe or 4200 B1 60 × 60 × 8 oe or 28 800 or 60 × 60 ÷ 4 oe or 900 or 60 × 60 × 35 oe or 126 000 or 60 × 8 ÷ 4 oe or 120 or 60 × 8 × 35 oe or 16 800 or 60 ÷ 4 × 35 oe or 525 or 8 ÷ 4 × 35 oe or 70

Additional Guidance

B3, B2 and B1 may be awarded for correct work, with no or incorrect answer, even if this is seen amongst multiple attempts	
Condone additional incorrect operations for B3, B2 and B1	
eg1 4 × 60 × 60 × 8 ÷ 4 × 35 (× 4 is an incorrect operation)	B3
eg2 60 × 60 × 8 ÷ 4 × 35 = 252 000 and 252 000 × 4 = 1 008 000	B3
eg3 60 × 60 ÷ 4 = 900 and 900 × 480 = 432 000 and 432 000 × 35 indicates 60 × 60 ÷ 4 × 35 (× 480 includes an additional incorrect operation of × 60)	B3
eg4 35 × 4 = 140 and 140 × 60 × 8 indicates 35 × 60 × 8	B1
The operations may be in any order and may be fragmented	
eg 8 ÷ 4 = 2 and 2 × 35	B1
An incorrect intermediate answer may be part of a correct set of operations	
eg 60 × 8 = 4800 and 4800 ÷ 4 = 1200 and 1200 × 35	B2

Q	Answer	Mark	Comments
14(b)	32.5 ÷ 4	M1	oe
	8.125	A1	oe
	Additional Guidance		
	Accept 8.1 or 8.12 or 8.13		M1A1
	Accept 8 with M1 seen		M1A1
	Ignore truncation or incorrect rounding after correct answer seen		M1A1

Q	Answer	Mark	Comments
15(a)	x: –3, 2, 3 y: 7, 2, 7	B1	

Q	Answer	Mark	Comments
15(b)	Plots at least four points correctly	M1	ft their points from part (a) $\pm \frac{1}{2}$ small square
	Correct graph drawn through the seven correct points	A1	$\pm \frac{1}{2}$ small square smooth quadratic curve
	Additional Guidance		
	Correct graph drawn without plotting the correct points		M1A1

Q	Answer	Mark	Comments
16(a)	All the points within 20 miles of A	B1	

Q	Answer	Mark	Comments
16(b)	Correct triangle drawn where angle *QPR* is [51, 55]° and *PR* is [7.3, 7.7] cm	B2	B1 Angle *QPR* is [51, 55]° or *PR* is [7.3, 7.7] cm or Angle *PQR* is [51, 55]° and *QR* is [7.3, 7.7] cm
	Additional Guidance		
	Ignore attempts to label *R*		
	PR drawn correctly, but not connected to *Q*		B1

Q	Answer	Mark	Comments
17	$15x^2 - 10x$	B2	B1 $15x^2$ or $-10x$ seen
	Additional Guidance		
	Condone an attempt to solve an equation after $15x^2 - 10x$ seen		B2
	Condone an attempt to solve an equation after $15x^2$ or $-10x$ seen		B1
	Do not ignore further incorrect working for B2 eg $15x^2 - 10x$ followed by $5x$		B1

Q	Answer	Mark	Comments
18(a)	Negative	B1	ignore descriptive words eg strong
	Additional Guidance		
	Description of relationship only eg as the car gets older the value goes down		B0

Q	Answer	Mark	Comments
18(b)	4000	B1	
	Additional Guidance		
	(3, 4000)		B0

Q	Answer	Mark	Comments
18(c)	[15 000, 15 400]	B1	

Q	Answer	Mark	Comments
18(d)	2012	B2	B1 horizontal line at 5600 $\pm \frac{1}{2}$ small square or [6.8, 7.2] implied by mark in correct place on line or horizontal axis
	Additional Guidance		
	2012 and 7 on answer line		B2

Q	Answer	Mark	Comments
19	$5a + b + 4a + 7b + 2a + 3b$ or $2(4a + 2b) + 2(a + 4b)$	M1	oe
	$11a + 11b$ or $10a + 12b$	A1	oe
	$11a + 11b$ and $10a + 12b$ and cannot tell	A1	oe with no further incorrect working
	Additional Guidance		
	Condone $22ab$ after $11a + 11b$ or $10a + 12b$ for first A mark only		M1A1A0
	$11a$ and $11b$ or $10a$ and $12b$ implies M1		M1A0
	$5a + b = 6ab$ and $4a + 7b = 11ab$ and $2a + 3b = 5ab$ and $6ab + 11ab + 5ab$		M1A0
	$6ab$ next to $5a + b$ and $11ab$ next to $4a + 7b$ and $5ab$ next to $2a + 3b$ shown on diagram and $6ab + 11ab + 5ab$		M1A0
	$5a + 4a + 2a = 15a$ and $b + 7b + 3b = 12b$ and $15a + 12b$		M1A0

Q	Answer	Mark	Comments
20	15, 11, 7, 3 as the first four terms or 19 – 4 × 5 or 19 – 20 or –1 as the first negative term or 4.75	M1	oe
	5	A1	
	Additional Guidance		
	5n on answer line with 5 in working		M1A0
	n = –1 without correct working for M1		M0
	4.75n on answer line with no correct M1 values		M0
	19 – 4n < 0 with no correct M1 values		M0

Q	Answer	Mark	Comments
21	diameter	B1	

Q	Answer	Mark	Comments
22	46 500	B1	

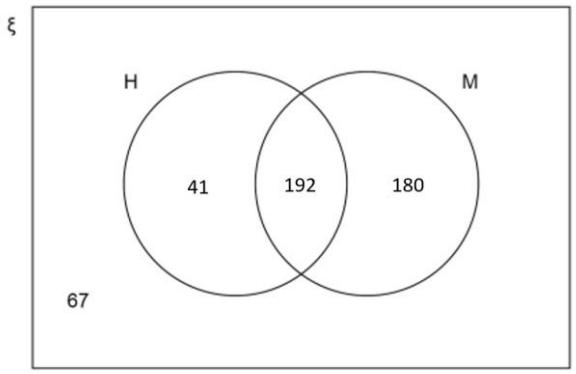
Q	Answer	Mark	Comments
23	270 ÷ (2.6 + 1) or 270 ÷ 3.6 or 75 or $\frac{2.6}{(2.6+1)}$ or $\frac{2.6}{3.6}$ or 0.72(…) or 2.6 – 1 or 1.6	M1	oe
	their 75 × 2.6 or 270 – their 75 or 195 or 270 × their 0.72(…) or their 75 × (2.6 – 1) or their 75 × their 1.6 or $\frac{\text{their } 1.6}{(2.6+1)}$ or 0.44(…)	M1dep	oe
	120	A1	
	Additional Guidance		
	195 and 75		M1M1
	270 ÷ 2.6		M0

Q	Answer	Mark	Comments
24	**Alternative method 1**		
	$\frac{28}{35} = 0.8$ and $\frac{40}{50} = 0.8$ or $\frac{35}{28} = 1.25$ and $\frac{50}{40} = 1.25$ or $\frac{28}{40} = 0.7$ and $\frac{35}{50} = 0.7$ or $\frac{40}{28} = 1.42857\ldots$ and $\frac{50}{35} = 1.42857...$	B1	oe decimal values must be the same, but may be correctly rounded or truncated
	Alternative method 2		
	$35 \times \frac{40}{50} = 28$ or $35 \div \frac{50}{40} = 28$ or $28 \times \frac{50}{40} = 35$ or $28 \div \frac{40}{50} = 35$ or $50 \times \frac{28}{35} = 40$ or $50 \div \frac{35}{28} = 40$ or $40 \times \frac{35}{28} = 50$ or $40 \div \frac{28}{35} = 50$	B1	oe calculation including all four values eg $\frac{35 \times 40}{50} = 28$

Additional guidance for this question is on the next page

	Additional Guidance	
24 cont	Calculations must be shown	
	Accept decimal truncation but truncated values must be the same eg $\frac{40}{28} = 1.42$ and $\frac{50}{35} = 1.42$	B1
	$\frac{28}{35} = \frac{40}{50}$ and $28 \times 50 = 35 \times 40$ and $1400 = 1400$ or $\frac{28}{35} = \frac{40}{50}$ and $28 \times 50 = 1400$ and $35 \times 40 = 1400$	B1
	$28 \times 1.25 = 35$ and $40 \times 1.25 = 50$ (oe ALT1)	B1
	$28 \times 1.25 = 35$ and $\frac{50}{40} = 1.25$	B1
	$28 \times 1.25 = 35$	B0
	Answers as fractions without a common denominator eg $\frac{28}{35} = \frac{40}{50}$	B0
	$\frac{28}{40} = 1.4$ and $\frac{50}{35} = 1.4$	B0
	$\frac{28}{7} = \frac{40}{10} = 4$ and $\frac{35}{7} = \frac{50}{10} = 5$	B0

Q	Answer	Mark	Comments
25	3	B1	

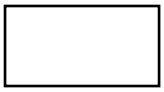
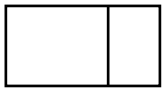
Q	Answer	Mark	Comments
26	480 × 0.4 or 192	M1	oe implied by 2400
	480 × $\frac{3}{8}$ or 180	M1	oe implied by 1440
	480 – their 192 – their 180 – 67 or 41	M1	oe implied by 287
	their 192 × 12.5 + their 180 × 8 + their 41 × 7 or 2400 + 1440 + 287	M1	
	4127	A1	
	Additional Guidance		
	Method marks may be awarded for correct work seen on Venn diagram or in working, with no or incorrect answer, even if this is seen amongst multiple attempts		
	For the 4th method mark, incorrectly placed values from their Venn diagram may be used or values connected to the correct category eg if house only and museum only values transposed on the Venn diagram accept their 192 × 12.5 + their 41 × 8 + their 180 × 7  		
	40% of 413 = 165, $\frac{3}{8}$ of 165 = 62, 413 – 62 – 165 = 186 165 × 12.50 + 62 × 8 + 186 × 7 = 3860.50		M0M0M1M1A0
	H = 154.875, H&M = 165.2 480 – 67 – 154.875 – 165.2		M0M0M1

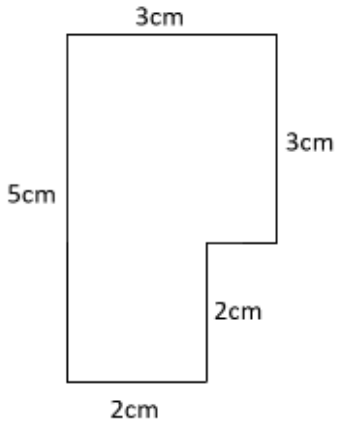
Q	Answer	Mark	Comments
27	**Alternative method 1**		
	198 × 0.45 or 89.1	M1	
	their 89.1 ÷ 6.25	M1	their 89.1 must come from a division or multiplication using 198 and 0.45 only
	14.256 or 14.26 or 14.3	A1	SC1 556.875 or 556.88 or 556.9 or 70.4
	Alternative method 2		
	198 ÷ 6.25 or 31.68	M1	
	their 31.68 × 0.45	M1	their 31.68 must come from a division or multiplication using 198 and 6.25 only
	14.256 or 14.26 or 14.3	A1	SC1 556.875 or 556.88 or 556.9 or 70.4
	Alternative method 3		
	0.45 ÷ 6.25 or 0.072	M1	
	198 × their 0.072	M1dep	
	14.256 or 14.26 or 14.3	A1	SC1 556.875 or 556.88 or 556.9 or 70.4
	Alternative method 4		
	6.25 ÷ 0.45 or $13.\dot{8}$ or 13.8(…) or 13.9	M1	
	198 ÷ their $13.\dot{8}$	M1dep	
	14.256 or 14.26 or 14.3	A1	SC1 556.875 or 556.88 or 556.9 or 70.4

Additional guidance for this question is on the next page

27 cont	**Additional Guidance**	
	198 × 0.45 ÷ 6.25 oe	M1M1
	198 × 0.45 × 6.25 (which gives 556.875)	M1M0
	198 ÷ 0.45 ÷ 6.25 (which gives 70.4)	M0M1
	198 ÷ 0.45 × 6.25 (which gives 2750)	M0M0
	Do not allow 6.25^2 for 6.25 eg 198 ÷ 6.25 ÷ 6.25	M0
	Ignore rounding or truncation after correct answer seen	

Q	Answer	Mark	Comments
28	6 × 10 – (12 + 7 + 15 + 3) or 60 – 37 or 23	M1	implied by two numbers with a total of 23 eg –11 and 34
	Two positive numbers with a total of 23	A1	
	Two positive numbers which make the range of the list 19	B1	eg a and 22, where $3 \leqslant a \leqslant 22$
	Additional Guidance		
	2 and 21 is the only fully correct answer		M1A1B1
	11.5 and 11.5		M1A1B0
	1 and 22		M1A1B0
	0 and 23		M1A0B0

Q	Answer	Mark	Comments
29(a)	Rectangle with horizontal sides 3 cm and vertical sides 2 cm	B1	accept internal vertical line 1 cm from the right, but no other internal lines
	Additional Guidance		
	 or  with dimensions 3 cm and 2 cm		B1
	Do not accept other internal lines		
	Mark intention		

Q	Answer	Mark	Comments
29(b)		B1	any orientation
	Additional Guidance		
	Do not accept internal lines		
	Do not accept a reflection		
	Mark intention		

Q	Answer	Mark	Comments
30	23 or 29	B1	implied by correct answer
	$\frac{23}{125}$ (× 100) or $\frac{29}{125}$ (× 100) or $\frac{\text{their number}}{125}$ (× 100) or their number = $\frac{125x}{100}$	M1	oe their number can be any integer value
	18.4 or 23.2 or correct evaluation of their number as a percentage of 125	A1ft	ft B0M1 oe their number must be an integer [20, 30] or any prime number

Additional Guidance	
18.4 or 23.2	B1M1A1
18.4 and 23.2	B1M1A1
23 or 29 must be clearly indicated as their prime number	
Any integer [20, 30] used can score B0M1A1ft eg 25 ÷ 125 × 100 with answer 20	B0M1A1ft
Any prime number used can score B0M1A1ft eg 7 ÷ 125 × 100 with answer 5.6	B0M1A1ft
24% of 125 is 30 with answer 24	B0M1A1ft
29% of 125 is 36.25 (36.25 is not an integer)	B1M0A0ft
28% of 125 is 35 with answer 28 (35 is an integer out of range)	B0M1A0ft
28% of 125 is 35 scores M1 (35 is an integer)	
25% of 125 is 31.25 scores M0 (31.25 is not an integer)	

Q	Answer	Mark	Comments
31	360 ÷ 15 or 24 or (15 – 2) × 180 or 2340	M1	oe may be seen on diagram
	156	A1	