# FUNCTIONAL SKILLS CERTIFICATE Functional Mathematics 

Level 2<br>Mark Scheme

4368
January 2017

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 Assessment Writer.

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

Examinations are marked to award positive achievement.
Marks are awarded for demonstrating the following interrelated process skills.
Representing Selecting the mathematics and information to model a situation.
R. 1 Candidates recognise that a situation has aspects that can be represented using mathematics.
R. 2 Candidates make an initial model of a situation using suitable forms of representation.
R. 3 Candidates decide on the methods, operations and tools, including ICT, to use in a situation.
R. 4 Candidates select the mathematical information to use.

Analysing Processing and using mathematics.
A. 1 Candidates use appropriate mathematical procedures.
A. 2 Candidates examine patterns and relationships.
A. 3 Candidates change values and assumptions or adjust relationships to see the effects on answers in models.
A. 4 Candidates find results and solutions.

Interpreting Interpreting and communicating the results of the analysis.
I.1 Candidates interpret results and solutions.
I. 2 Candidates draw conclusions in light of situations.
I. 3 Candidates consider the appropriateness and accuracy of results and conclusions.
I. 4 Candidates choose appropriate language and forms of presentation to communicate results and solutions.

In particular, individual marks are mapped onto the following skills standards.
Representing Making sense of the situations and representing them.
A learner can:
Ra Understand routine and non-routine problems in familiar and unfamiliar contexts and situations.
$\mathbf{R b} \quad$ Identify the situation or problems and identify the mathematical methods needed to solve them.

Rc Choose from a range of mathematics to find solutions.

Analysing Processing and using the mathematics.
A learner can:

Aa Apply a range of mathematics to find solutions.
Ab Use appropriate checking procedures and evaluate their effectiveness at each stage.

Interpreting Interpreting and communicating the results of the analysis. A learner can:

Ia Interpret and communicate solutions to multistage practical problems in familiar and unfamiliar contexts and situations.
lb Draw conclusions and provide mathematical justifications.

To facilitate marking, the following categories are used:
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 following a mistake in an earlier step.

SC Special case. Marks awarded within the scheme for a common misinterpretation which has some mathematical worth.
oe Or equivalent. Accept answers that are equivalent.
eg, accept 0.5 as well as $\frac{1}{2}$

| $\mathbf{Q}$ | Answer | Mark | Comments |
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| 1(a) | 48 | B1 <br> Aa |  |
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|  | Additional Guidance |  |  |
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| 1(b) | Alternative method 1 |  |  |
| :---: | :---: | :---: | :---: |
|  | $\frac{2}{16}$ or $\frac{1}{8}$ or 0.125 <br> or $1-\frac{2}{16}$ or $\frac{14}{16}$ or $\frac{7}{8}$ or 0.875 <br> or $24 \div 16$ or 1.5 <br> or $16 \div 24$ or $0.6 \ldots$ or 0.7 | $\begin{aligned} & \text { M1 } \\ & \text { Ra } \end{aligned}$ |  |
|  | $\begin{aligned} & 24 \text { - their } \frac{2}{16} \times 24 \\ & \text { or }\left(1-\text { their } \frac{2}{16}\right) \times 24 \text { or } \frac{14}{16} \times 24 \\ & \text { or } 24 \text { - their } 1.5 \times 2 \\ & \text { or } 24-\frac{2}{\text { their } 0.6 \ldots} \text { or } 24-3 \end{aligned}$ | $\begin{aligned} & \text { M1 } \\ & R b \end{aligned}$ | Fully correct method |
|  | 21 | $\begin{aligned} & \text { A1 } \\ & \text { Aa } \end{aligned}$ |  |
|  | Alternative method 2 |  |  |
|  | $200 \div 16 \times 2$ $550 \div 16 \times 2$ <br> or 25 or 68.75 | $\begin{aligned} & \text { M1 } \\ & \text { Ra } \end{aligned}$ | 200 can be 250 or 100 or 553 or 2 or 1 |
|  | $200 \div 24$ or $550 \div 24$ or <br> $8.3 \ldots$ $22.9 \ldots$ <br> and and <br> $(200-$ their 25$)$ $(550-$ their <br> $\div$ their $8.3 \ldots$ $68.75) \div$ <br>  their $22.9 \ldots$ | $\begin{aligned} & \text { M1 } \\ & R b \end{aligned}$ | 200 can be 250 or 100 or 553 or 2 or 1 Fully correct method |
|  | 21 | $\begin{aligned} & \mathrm{A} 1 \\ & \mathrm{Aa} \end{aligned}$ |  |
|  | Additional Guidance |  |  |
|  | The sum of any combination of 200, 250, 100, 2 and 1 may be used for 200 |  |  |


| $\mathbf{Q}$ | Answer | Mark | Comments |
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| $\mathbf{Q}$ | Answer | Mark | Comments |
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| 1(c) | Alternative method 2 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $16 \times 10$ or 160 | $24 \times 10$ or 240 | $\begin{aligned} & \text { M1 } \\ & \text { Ra } \end{aligned}$ | Number of cookies |
|  | their $160 \div 4$ or 40 | their $240 \div 8$ or 30 | $\begin{aligned} & \text { M1 } \\ & \text { Ra } \end{aligned}$ | Number of bags of cookies |
|  | their $40 \times 1.35$ or 54 | their $30 \times 1.75$ or 52.5(0) | $\begin{aligned} & \text { M1 } \\ & R b \end{aligned}$ | Selling price of bags of cookies <br> Must be a number of bags, not a number of cookies |
|  | their 54 - their 52.5(0) or 1.5(0) |  | $\begin{aligned} & \text { M1 } \\ & \text { Rc } \end{aligned}$ | Difference in selling prices |
|  | $\begin{aligned} & \text { their } 40 \times 0.02 \\ & (+19.5(0)) \\ & \text { or } 0.8(0) \\ & \text { or } 20.3(0) \end{aligned}$ | $\begin{aligned} & \text { their } 30 \times 0.02 \\ & (+19.5(0)) \\ & \text { or } 0.6(0) \\ & \text { or } 20.1(0) \end{aligned}$ | $\begin{aligned} & \text { M1 } \\ & R c \end{aligned}$ | Cost of bags or total costs for cookies |
|  | their $1.5(0)$ - their $0.8(0)+$ <br> their 0.6(0) <br> or their 1.5(0) - their 20.3(0) + their 20.1(0) |  | $\begin{aligned} & \text { M1 } \\ & \text { Aa } \end{aligned}$ | Difference in selling prices - difference in cost of bags <br> or difference in selling prices - difference in total costs <br> Number of bags cannot be zero or one <br> Must be from a different number of bags for large and small cookies |
|  | 1.3(0) and Yes |  | $\begin{gathered} \text { A2 } \\ \text { Ib lb } \end{gathered}$ | A1 1.3(0) or 53.2(0) and 51.9(0) or $33.7(0)$ and $32.4(0)$ <br> A1ft Correct decision for their value with 1st, 2nd, 3rd and 4th M1 gained |


| $\mathbf{Q}$ | Answer | Mark | Comments |
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| 1(c) | Alternative method 3 |  |  |  |
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|  | $16 \div 4$ or 4 | $24 \div 8$ or 3 | $\begin{aligned} & \text { M1 } \\ & \text { Ra } \end{aligned}$ | Number of bags of cookies (1 batch) |
|  | their $4 \times 1.35$ or 5.4(0) | their $3 \times 1.75$ or 5.25 | $\begin{aligned} & \mathrm{M} 1 \\ & \mathrm{Rb} \end{aligned}$ | Selling price of bags of cookies (1 batch) Must be a number of bags, not a number of cookies |
|  | $\begin{aligned} & \text { their } 4 \times 0.02 \\ & (+19.5(0) \div 10) \\ & \text { or } 0.08 \\ & \text { or } 2.03 \end{aligned}$ | $\begin{aligned} & \text { their } 3 \times 0.02 \\ & (+19.5(0) \div 10) \\ & \text { or } 0.06 \\ & \text { or } 2.01 \end{aligned}$ | $\begin{aligned} & \mathrm{M} 1 \\ & R c \end{aligned}$ | Cost of bags or total costs for cookies (1 batch) <br> Allow 19.5(0) for $19.5(0) \div 10$ |
|  | their 5.4(0) - <br> their 0.08 <br> or 5.32 <br> or <br> their 5.4(0) - <br> their 2.03 <br> or 3.37 | their 5.25 - <br> their 0.06 <br> or 5.19 <br> or <br> their 5.25 - <br> their 2.01 <br> or 3.24 | $\begin{aligned} & \text { M1 } \\ & R c \end{aligned}$ | Selling price of bags - cost of bags or selling price of bags - total cost (1 batch) <br> Number of bags cannot be zero or one <br> Must be from a different number of bags for large and small cookies if both attempted |
|  | their 5.32 - their or their 3.37 - th | 9 <br> 3.24 or 0.13 | $\begin{aligned} & \text { M1 } \\ & \text { Aa } \end{aligned}$ | Difference in profits (1 batch) |
|  | $10 \times$ their 0.13 |  | $\begin{aligned} & \text { M1 } \\ & \text { Ra } \end{aligned}$ | Difference in profits (10 batches) |
|  | 1.3(0) and Yes |  | $\begin{gathered} \text { A2 } \\ l b \text { lb } \end{gathered}$ | A1 1.3(0) or 53.2(0) and 51.9(0) or $33.7(0)$ and $32.4(0)$ <br> A1ft Correct decision for their value with 1st, 2nd, 5th and 6th M1 gained |


| $\mathbf{Q}$ | Answer | Mark | Comments |
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| $\mathbf{Q}$ | Answer | Mark | Comments |
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| 2(a) | $120+4 \times 140$ <br> or $120+560$ or 680 | $\begin{aligned} & \text { M1 } \\ & \text { Ra } \end{aligned}$ |  |
| :---: | :---: | :---: | :---: |
|  | £680 | $\begin{gathered} \mathrm{A} 1 \\ \text { la } \end{gathered}$ | Must see $£$ symbol <br> SC1 $£ 660$ or $£ 1060$ |
|  | Additional Guidance |  |  |
|  | Mark holistically with 2(a) check |  |  |


| 2(a) <br> Check | Reverse calculation $\text { eg }(680-120) \div 4=140$ <br> or <br> alternative method $\begin{aligned} \text { eg } & 120+140+140+140+140 \\ & =680 \end{aligned}$ | $\begin{aligned} & \text { B1ft } \\ & A b \end{aligned}$ | ft their calculation <br> Must reverse to 120 or 140 or 4 or 5 or 0 |
| :---: | :---: | :---: | :---: |
|  | Additional Guidance |  |  |
|  | Mark holistically with 2(a) |  |  |


| $\mathbf{Q}$ | Answer | Mark | Comments |
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|  | 4.87 and 65.7 |  | B1 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | their $65.7 \times$ <br> 0.2(0) <br> or 13.14 | 0.8 | $\begin{aligned} & \text { M1 } \\ & \text { Ra } \end{aligned}$ | their 65.7 can be 47.1 or 83.1 or 39.2 |  |  |  |
|  | their 65.7 - <br> their 13.14 <br> or 52.56 | $\begin{aligned} & 0.8 \times \text { their } 65.7 \\ & \text { or } 52.56 \end{aligned}$ | $\begin{aligned} & \text { M1 } \\ & \text { Aa } \end{aligned}$ | actual fuel efficiency ( $f$ ) <br> their 13.14 cannot be 20 or 0.2 <br> Award if method seen for $20 \%$ in first M1 |  |  |  |
| 2(b) | $62 \times 5 \times 46$ <br> or 14260 | $62 \times$ their $4.87 \div$ their 52.56 or 5.7... | $\begin{aligned} & \text { M1 } \\ & \text { Ra } \end{aligned}$ |  | es ( $m$ ) | miles <br> their 4 4.96 <br> their 52 65.7 | cost $\div$ fuel <br> 87 can be <br> .56 can be |
|  | their $14260 \times$ their 4.87 their 52.56 | $5 \times 46 \times$ <br> their 5.7... | $\begin{aligned} & \text { M1 } \\ & \text { Rc } \end{aligned}$ |  | es $\times$ cost $\div$ fuel ir 4.87 can be 6 <br> ir 52.56 can be 7 |  |  |
|  | [1320, 1321.30] and Yes |  | A2ft <br> lb lb | A1ft [1320, 1321.30] <br> A1ft Correct conclusion for their value with 2nd, 3rd and 4th M1 gained <br> Only ft their 4.87 and their 65.7 |  |  |  |
|  | Additional Guidance |  |  |  |  |  |  |
|  | Using (4.87 and) 47.1 | 1st M1 9.42 | 2nd M1 | 37.68 | 1843.(...) and Yes |  | B0 M4 A2ft |
|  | Using (4.87 and) 83.1 | 1st M1 16.62 | 2nd M1 | 66.48 | 1044.(...) or 1045 and No |  | B0 M4 A2ft |
|  | Using (4.87 and) 39.2 | 1st M1 7.84 | 2nd M1 | 31.36 | 2214.(...) and Yes |  | B0 M4 A2ft |
|  | Using 4.96 (and 65.7) | 1345.(...) or 1346 and Yes |  |  |  |  | B0 M4 A2ft |
|  | Using 4.96 and 47.1 | 1st M1 9.42 | 2nd M1 | 37.68 | 1877.(...) and Yes |  | B0 M4 A2ft |
|  | Using 4.96 and 83.1 | 1st M1 16.62 | 2nd M1 | 66.48 | 1063.(...) or 1064 and No |  | B0 M4 A2ft |
|  | Using 4.96 and 39.2 | 1st M1 7.84 | 2nd M1 | 31.36 | 2255.(...) and Yes |  | B0 M4 A2ft |


| $\mathbf{Q}$ | Answer | Mark | Comments |
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| 2(c) | Alternative method 1 |  |  |
| :---: | :---: | :---: | :---: |
|  | 89 and 98 and 77 and 86 and 95 and 110 and 88 and 75 or $1(\mathrm{~h}) 29(\mathrm{~min})$ and $1(\mathrm{~h}) 38(\mathrm{~min})$ and $1(\mathrm{~h}) 17(\mathrm{~min})$ and $1(\mathrm{~h}) 26(\mathrm{~min})$ and $1(\mathrm{~h}) 35(\mathrm{~min})$ and $1(\mathrm{~h}) 50(\mathrm{~min})$ and $1(\mathrm{~h}) 28(\mathrm{~min})$ and $1(\mathrm{~h}) 15(\mathrm{~min})$ | $\begin{aligned} & \text { M1 } \\ & \text { Ra } \end{aligned}$ | At least 6 correct |
|  | $\begin{aligned} & \frac{\text { their } 5}{8} \text { or } 0.625 \\ & \text { or } \frac{\text { their } 3}{8} \text { or } 0.375 \end{aligned}$ | $\begin{aligned} & \text { M1 } \\ & R c \end{aligned}$ |  |
|  | $\begin{aligned} & \frac{\text { their } 5}{8} \times 120 \\ & \text { or }\left(1-\frac{\text { their } 3}{8}\right) \times 120 \end{aligned}$ | $\begin{aligned} & \text { M1 } \\ & \text { Aa } \end{aligned}$ |  |
|  | 75 and No or $\frac{75}{120}$ and No (and 89 and 98 and 77 and 86 and 95 and 110 and 88 and 75 and 90 ) | $\begin{gathered} \text { A2 } \\ \text { Ib lb } \end{gathered}$ | A1 75 or $\frac{75}{120}$ <br> (and 89 and 98 and 77 and 86 and 95 and 110 and 88 and 75 and 90) <br> A1ft Correct conclusion for their value with all M marks gained |


| $\mathbf{Q}$ | Answer | Mark | Comments |
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| 2(c) | Alternative method 2 |  |  |
| :---: | :---: | :---: | :---: |
|  | 89 and 98 and 77 and 86 and 95 and 110 and 88 and 75 or $1(\mathrm{~h}) 29(\mathrm{~min})$ and $1(\mathrm{~h}) 38(\mathrm{~min})$ and $1(\mathrm{~h}) 17(\mathrm{~min})$ and $1(\mathrm{~h}) 26(\mathrm{~min})$ and $1(\mathrm{~h}) 35(\mathrm{~min})$ and $1(\mathrm{~h}) 50(\mathrm{~min})$ and $1(\mathrm{~h}) 28(\mathrm{~min})$ and $1(\mathrm{~h}) 15(\mathrm{~min})$ | $\begin{aligned} & \text { M1 } \\ & \text { Ra } \end{aligned}$ | At least 6 correct |
|  | $\frac{\text { their } 5}{8} \text { or } 0.625$ | $\begin{aligned} & \text { M1 } \\ & \text { Rc } \end{aligned}$ |  |
|  | their $5 \div 8$ or 0.625 <br> and $85 \div 120$ or $0.7(08 \ldots)$ or $0.7(1)$ | $\begin{aligned} & \text { M1 } \\ & \text { Aa } \end{aligned}$ | Converts $\frac{\text { their } 5}{8}$ and $\frac{85}{120}$ to a comparable form |
|  | 0.625 and 0.7 (08 ...) or $0.7(1)$ and No (and 89 and 98 and 77 and 86 and 95 and 110 and 88 and 75 and 90 ) | $\begin{gathered} \text { A2 } \\ \text { Ib lb } \end{gathered}$ | A1 0.625 and $0.7(08 \ldots$..) or 0.7(1) <br> (and 89 and 98 and 77 and 86 and 95 and 110 and 88 and 75 and 90) <br> A1ft Correct conclusion for their value with all M marks gained |
|  |  | tional | idance |


| $\mathbf{Q}$ | Answer | Mark | Comments |
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| 2(c) | Alternative method 3 |  |  |
| :---: | :---: | :---: | :---: |
|  | 89 and 98 and 77 and 86 and 95 and 110 and 88 and 75 or $1(\mathrm{~h}) 29(\mathrm{~min})$ and $1(\mathrm{~h}) 38(\mathrm{~min})$ and $1(\mathrm{~h}) 17(\mathrm{~min})$ and $1(\mathrm{~h}) 26(\mathrm{~min})$ and $1(\mathrm{~h}) 35(\mathrm{~min})$ and $1(\mathrm{~h}) 50(\mathrm{~min})$ and $1(\mathrm{~h}) 28(\mathrm{~min})$ and $1(\mathrm{~h}) 15(\mathrm{~min})$ | $\begin{aligned} & \text { M1 } \\ & \text { Ra } \end{aligned}$ | At least 6 correct |
|  | $\frac{85}{120} \times 8$ | $\begin{gathered} \mathrm{M} 2 \\ R C A a \end{gathered}$ |  |
|  | [5.6, 5.7] and 5 and No (and 89 and 98 and 77 and 86 and 95 and 110 and 88 and 75 and 90 ) | $\begin{gathered} \text { A2 } \\ \text { Ib lb } \end{gathered}$ | A1 $[5.6,5.7]$ and 5 <br> (and 89 and 98 and 77 and 86 and 95 and 110 and 88 and 75 and 90) <br> A1ft Correct conclusion for their values with all M marks gained |


| $\mathbf{Q}$ | Answer | Mark | Comments |
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| 3(a) | Alternative method 1 |  |  |
| :---: | :---: | :---: | :---: |
|  | $128 \times 25$ or 3200 or $53.3 \ldots(\mathrm{~h})$ or $40 \times 30$ or 1200 or 20 (h) | $\begin{aligned} & \text { M1 } \\ & \text { Ra } \end{aligned}$ |  |
|  | their $3200+$ their 1200 or 4400 or $73.3 \ldots(h)$ | $\begin{aligned} & \text { M1 } \\ & \text { Rb } \end{aligned}$ | Must be two times added |
|  | $\begin{aligned} & 2 \mathrm{pm}-8.30 \mathrm{am}-20-20 \\ & \text { or } 5(\mathrm{~h}) 30(\mathrm{~min})-20-20 \\ & \text { or } 290 \text { or } 4.8 \ldots(\mathrm{~h}) \end{aligned}$ | $\begin{aligned} & \text { M1 } \\ & \text { Aa } \end{aligned}$ |  |
|  | their $4400 \div$ their 290 | $\begin{aligned} & \mathrm{M} 1 \\ & \mathrm{Rc} \end{aligned}$ | their 4400 could be 3200 or 1200 |
|  | [15.1, 15.2] or 15 | $\begin{aligned} & \mathrm{A} 1 \\ & \mathrm{Aa} \end{aligned}$ | May be implied |
|  | 16 | A1ft <br> Ib | Rounds up their [15.1, 15.2] or the answer to their calculation <br> Must score M4 |
|  | Alternative method 2 |  |  |
|  | $128 \times 25$ or 3200 or $53.3 \ldots(\mathrm{~h})$ or $40 \times 30$ or 1200 or 20 (h) | M1 $R a$ |  |
|  | $\begin{aligned} & 2 \mathrm{pm}-8.30 \mathrm{am}-20-20 \\ & \text { or } 5(\mathrm{~h}) 30(\mathrm{~min})-20-20 \\ & \text { or } 290 \text { or } 4.8 \ldots(\mathrm{~h}) \end{aligned}$ | $\begin{aligned} & \text { M1 } \\ & \text { Aa } \end{aligned}$ |  |
|  | their $3200 \div$ their 290 or 11 ( $0 \ldots$...) or their $1200 \div$ their 290 or $4 .(1 \ldots)$ | M1 $R c$ |  |
|  | their 11.(0...) + their 4.(1...) | $\begin{aligned} & \text { M1 } \\ & R b \end{aligned}$ | Must be two numbers of cleaners added |
|  | $\begin{aligned} & {[15.1,15.2] \text { or } 15} \\ & \text { or } 11 .(0 \ldots) \text { and } 4 .(1 \ldots) \end{aligned}$ | $\begin{aligned} & \text { A1 } \\ & \text { Aa } \end{aligned}$ | May be implied |
|  | 16 | $\begin{gathered} \text { A1ft } \\ \text { Ib } \end{gathered}$ | Rounds up their [15.1, 15.2] or the answer to their calculation <br> Must score M4 |


| Q | Answer | Mark | Comments |
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| 3(a) | Alternative method 3 |  |  |
| :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 2 \mathrm{pm}-8.30 \mathrm{am}-20-20 \\ & \text { or } 5(\mathrm{~h}) 30(\mathrm{~min})-20-20 \\ & \text { or } 290 \text { or } 4.8 \ldots(\mathrm{~h}) \end{aligned}$ | $\begin{aligned} & \text { M1 } \\ & \text { Aa } \end{aligned}$ |  |
|  | their $290 \div 25$ or 11.6 <br> or their $290 \div 30$ or $9.6 \ldots$ or 9.7 | $\begin{aligned} & \text { M1 } \\ & \text { Ra } \end{aligned}$ | Standard rooms per cleaner or deluxe rooms per cleaner |
|  | $128 \div$ their $11.6 \ldots$ or 11 .(0...) or $40 \div$ their $9.6 \ldots$ or $4 .(1 \ldots)$ | $\begin{aligned} & \text { M1 } \\ & \text { Rc } \end{aligned}$ |  |
|  | their 11.(0...) + their 4.(1...) | $\begin{aligned} & \text { M1 } \\ & R b \end{aligned}$ | Must be two numbers of cleaners added |
|  | [15.1, 15.2] or 15 <br> or 11.(0...) and 4.(1...) | $\begin{aligned} & \mathrm{A} 1 \\ & \mathrm{Aa} \end{aligned}$ | May be implied |
|  | 16 | $\begin{gathered} \text { A1ft } \\ \text { lb } \end{gathered}$ | Rounds up their [15.1, 15.2] or the answer to their calculation <br> Must score M4 |
|  |  | tiona | uidance |
|  | Allow decimal times for M marks |  |  |


| Q Answer | Mark | Comments |
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| $\mathbf{Q}$ | Answer | Mark | Comments |
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| $\mathbf{Q}$ | Answer | Mark | Comments |
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| 4(a) | $9 \leq$ number $\leq 12$ <br> and cm | B1 <br> la | May be on the diagram or within a product <br> Correct units must be seen |
| :--- | :--- | :---: | :--- |
|  | Additional Guidance |  |  |


| 4(b) | Net of a cuboid with 5 or 6 faces | $\begin{aligned} & \mathrm{B} 1 \\ & \text { la } \end{aligned}$ |  |
| :---: | :---: | :---: | :---: |
|  | Edge $\geq 15.2 \mathrm{~cm}$ labelled in correct position at least once | $\begin{aligned} & \mathrm{B} 1 \\ & \mathrm{Aa} \end{aligned}$ |  |
|  | Fully correct net of cuboid with length and width of all 6 rectangles correctly labelled at least once | $\begin{aligned} & \text { B1ft } \\ & \text { la } \end{aligned}$ | Only ft their floor length in (a) <br> Appropriate edges must be labelled $\geq 15.2 \mathrm{~cm}$ <br> SC2 Fully correct apart from 12.7 cm < edges < 15.2 cm instead of edges $\geq 15.2 \mathrm{~cm}$ |
|  | Additional Guidance |  |  |
|  | Ignore flaps throughout |  |  |


| $\mathbf{Q}$ | Answer | Mark | Comments |
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| Q Answer | Mark | Comments |
| :--- | :--- | :--- | :--- |


| 4(d) | $\frac{5}{9}(46-32) \text { or } \frac{5}{9} \times 14$ <br> or $\frac{5}{9}(85-32) \text { or } \frac{5}{9} \times 53$ | $\begin{aligned} & \text { M1 } \\ & \text { Rc } \end{aligned}$ | Allow $0.55 \ldots$ or 0.56 for $\frac{5}{9}$ |
| :---: | :---: | :---: | :---: |
|  | $7.7 \ldots$ or 7.8 or 8 or 29.4... or 29 | $\begin{aligned} & \mathrm{A} 1 \\ & \mathrm{Aa} \end{aligned}$ |  |
|  | 8 and 29 | A1ft <br> lb | ft their $7.7 \ldots$ and their 29.4... correctly rounded if M1 A0 and two values seen |
|  | Additional Guidance |  |  |
|  | Both values must need rounding for A 1 ft |  |  |


| 4(e) | $2000 \div 71$ or $28 .(1 \ldots)$ or 28.2 or $28 \times 71=1988$ <br> or $29 \times 71=2059$ | $\begin{aligned} & \text { M1 } \\ & \text { Aa } \end{aligned}$ |  |
| :---: | :---: | :---: | :---: |
|  | 28 | $\begin{aligned} & \mathrm{A} 1 \\ & \mathrm{lb} \end{aligned}$ | Embedded answer scores M1 A0 |
|  | Additional Guidance |  |  |
|  | Mark holistically with 4(e) check |  |  |


| $\begin{gathered} \text { 4(e) } \\ \text { Check } \end{gathered}$ | Reverse calculation <br> eg1 28 . $(1 \ldots) \times 71=2000$ <br> eg2 $2000 \div 28=71$. $(4 \ldots)$ or <br> alternative method | $\begin{gathered} \mathrm{B} 1 \mathrm{ft} \\ A b \end{gathered}$ | ft their calculation |
| :---: | :---: | :---: | :---: |
|  | Additional Guidance |  |  |
|  | Mark holistically with 4(e) |  |  |


| $\mathbf{Q}$ | Answer | Mark | Comments |
| :---: | :---: | :---: | :---: |


| 4(f) | $\begin{aligned} & 2000 \div 48 \text { or } 41 .(6 \ldots) \text { or } 41.7 \text { or } 42 \\ & \text { or } 41 \times 48=1968 \\ & \text { or } 41 \times 49=2009 \\ & \text { or } 42 \times 48=2016 \end{aligned}$ | $\begin{aligned} & \text { M1 } \\ & \text { Aa } \end{aligned}$ |  |
| :---: | :---: | :---: | :---: |
|  | their 41 - their 28 | $\begin{gathered} \text { M1 } \\ \text { lb } \end{gathered}$ | their 28 from (e) <br> their 41 and their 28 may be decimals |
|  | 13 | A1ft <br> Aa | Only ft their 28 from (e) <br> Allow full marks for 13 from 42-29 |
|  | Additional Guidance |  |  |

