## Cambridge Secondary 1 Progression Test Mark scheme <br> Cambridge Secondary 1

## Mathematics

## Stage 9

These tables give general guidelines on marking answers that involve number and place value, and units of length, mass, money, duration or time. If the mark scheme does not specify the correct answer, refer to these general guidelines.

## Number and Place value

The table shows various general rules in terms of acceptable decimal answers.

## Accept

Accept omission of leading zero if answer is clearly shown, e.g.
. 675
Accept tailing zeros, unless the question has asked for a specific number of decimal places, e.g. 0.7000

Always accept appropriate tailing zeros, e.g.
$3.00 \mathrm{~m} ; 5.000 \mathrm{~kg}$
Accept a comma as a decimal point if that is the convention that you have taught the children, e.g. 0,638

## Units

For questions involving quantities, e.g. length, mass, money, duration or time, correct units must be given in the answer. The table shows acceptable and unacceptable versions of the answer 1.85 m .

|  | Correct answer | Also accept | Do not accept |
| :--- | :--- | :--- | :--- |
| Units are not given <br> on answer line and <br> the question does not <br> specify a particular unit <br> for the answer | 1.85 m | Correct conversions <br> provided the unit is <br> stated, e.g. <br> 1 m 85 cm <br> 185 cm <br> 1850 mm <br> 0.00185 km | 1.85 |
| If the unit is given on <br> the answer line, e.g. <br> $\ldots . . . . . . . . . . . . . . . . . . . . . . . ~ m ~$ | $\ldots \ldots .1 .85 \ldots . . . \mathrm{m}$ | Correct conversions, <br> provided the unit is <br> stated unambiguously, <br> e.g. .....185 cm...... m | $\ldots \ldots . .185 \ldots . . . \mathrm{m}$ <br> etc. |
| If the question <br> states the unit that <br> the answer should <br> be given in, e.g. | 1.85 m | 1.85 <br> 'Give your answer in <br> metres' |  |

## Money

For questions involving money, it is essential that appropriate units are given in the answer.

The table shows acceptable and unacceptable versions.

|  | Accept | Do not accept |
| :---: | :---: | :---: |
| If the amount is in dollars and cents, the answer should be given to two decimal places. | $\begin{aligned} & \$ 0.30 \\ & \$ 9 \text { or } \$ 9.00 \end{aligned}$ | \$09 or \$09.00 |
| If units are not given on answer line | Any unambiguous indication of the correct amount, e.g. <br> 30 cents; 30 c <br> $\$ 0.30$; $\$ 0.30$ c; $\$ 0.30$ cents <br> \$0-30; \$0=30; \$00:30 | 30 or 0.30 without a unit <br> Incorrect or ambiguous answers, e.g. <br> \$0.3; \$30; $\$ 30$ cents; 0.30 cents |
| If $\$$ is shown on the answer line | \$......0.30...... <br> \$...... 0.30 cents...... <br> Accept all unambiguous indications, as shown above | \$...... 30...... <br> \$...... 30 cents...... (this cannot be accepted because it is ambiguous, but if the dollar sign is deleted it becomes acceptable) |
| If cents is shown on the answer line | ......30......cents | ....... 0.30 ......cents |

## Duration

Accept any unambiguous method of showing duration and all reasonable abbreviations of hours (h, hr, hrs), minutes ( $\mathrm{m}, \mathrm{min}, \mathrm{mins}$ ) and seconds ( $\mathrm{s}, \mathrm{sec}$, secs).

| Accept | Do not accept |
| :--- | :--- |
| Any unambiguous indication using any <br> reasonable abbreviations of hours (h, hr, hrs), <br> minutes (m, min, mins) and seconds (s, sec, |  |
| secs), e.g. |  |
| 2 hours 30 minutes; $2 \mathrm{~h} 30 \mathrm{~m} ; 02 \mathrm{~h} 30 \mathrm{~m}$ | $2.30 ; 2.3 ; 2.30$ hours; $2.30 \mathrm{~min} ; 2 \mathrm{~h} \mathrm{3}$; |
| $5 \mathrm{~min} 24 \mathrm{sec} ; 00 \mathrm{~h} 05 \mathrm{~m} 24 \mathrm{~s}$ | 2.3 h |
| Any correct conversion with appropriate units, |  |
| e.g. | $2.5 ; 150$ |
| 2.5 hours; 150 mins | 324 |
| 324 seconds | Do not accept ambiguous indications, e.g. |
| Also accept unambiguous digital stopwatch |  |
| format, e.g. | $02: 30$ |
| $02: 30: 00$ | 5.24 |
| $00.05: 24 ; 05: 24 \mathrm{~s}$ |  |

## Time

There are many ways to write times, in both numbers and words, and marks should be awarded for any unambiguous method. Accept time written in numbers or words unless there is a specific instruction in the question. Some examples are given in the table.


## Stage 9 Paper 1 Mark Scheme

| Question | $\mathbf{1}$ |  |  |  |
| :---: | :---: | :--- | :--- | :---: |
| Part | Mark | Answer | Further Information |  |
|  | $\mathbf{1}$ | 15 |  |  |
| Total | $\mathbf{1}$ |  |  |  |


| Question | 2 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Part | Mark | Answer | Further Information |  |
|  | $\mathbf{1}$ | $72\left({ }^{\circ}\right)$ |  |  |
| Total | 1 |  |  |  |


| Question | 3 |  |  |
| :---: | :---: | :---: | :---: |
| Part | Mark | Answer | Further Information |
| (a) | 2 |  | Tolerance $\pm 1 \mathrm{~mm}$ horizontally $\pm \$ 100$ vertically <br> Award 1 mark for at least 3 more correctly plotted points all within tolerance. |
| (b) | 1 | Negative | Ignore words describing the strength of the correlation. Accept '-ve' but not '-' |
| Total | 3 |  |  |



6

| Question | 5 |  |  |
| :---: | :---: | :---: | :---: |
| Part | Mark | Answer | Further Information |
| (a) | 1 |  | Accept in any orientation. Lines should be ruled. Ignore hidden edges drawn. |
| (b) | 1 | 3 |  |
| Total | 2 |  |  |


| Question | 6 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Part | Mark | Answer |  |  | Further Information |
|  | 1 | 3.24 .15 .6 | 8.4 | 23.3 | Accept any clear indication. |
| Total | 1 |  |  |  |  |


| Question | 7 |  |  |
| :---: | :---: | :---: | :---: |
| Part | Mark | Answer | Further Information |
| (a) | 1 |  |  |
| (b) | 2 |  | Award 1 mark for 3 and 1 mark for $p^{8}$ <br> so long as expression is of form $a p^{b}$ where $a$ and $b$ are non-zero numbers e.g. $3 p^{16}$ and $16 p^{8}$ would score $1,3+p^{8}$ would score zero |
| Total | 3 |  |  |

7

| Question | $\mathbf{8}$ |  |  |  |  |
| :--- | :---: | :--- | :---: | :---: | :---: |
| Part | Mark | Answer |  |  | Further Information |
| (a) | $\mathbf{1}$ | $a(2 a+5)$ |  |  |  |
| (b) | $\mathbf{1}$ | $6(1-3 x+4 y)$ |  |  |  |
| Total | $\mathbf{2}$ |  |  |  |  |
|  |  |  |  |  |  |



| Question | 10 |  |  |
| :---: | :---: | :---: | :---: |
| Part | Mark | Answer | Further Information |
|  | 2 | $3 \frac{23}{30}$ or equivalents such as $\frac{113}{30}$ | Award 1 mark for correct <br> common denomitor seen $(30$ <br> or a multiple of 30) and at <br> least one correct numerator, <br> e.g. <br> $2 \frac{5}{30}+1 \frac{18}{30}, \frac{65}{30}+\frac{48}{30}$ |
| Total | $\mathbf{2}$ |  |  |

8

| Question | 11 |  |  |
| :---: | :---: | :--- | :--- |
| Part | Mark | Answer | Further Information |
|  | $\mathbf{2}$ | Reflection (in the line) $y=2$ | $\begin{array}{l}\text { Both reflection and (the line) } \\ y=2 \text { are required for 2 } \\ \text { marks. } \\ \text { Do not accept this as a } \\ \text { drawing on the diagram, it } \\ \text { must be a description. }\end{array}$ |
| Award 1 mark for reflection |  |  |  |
| or $y=2$ seen. |  |  |  |$\}$


| Question | 12 |  |  |  |
| :---: | :---: | :--- | :--- | :---: |
| Part | Mark | Answer | Further Information |  |
|  | 1 | 1 |  |  |
| Total | 1 |  |  |  |


| Question | 13 |  |  |  |  |  |
| :--- | :---: | :--- | :--- | :---: | :---: | :---: |
| Part | Mark | Answer |  |  |  | Further Information |
| (a) | $\mathbf{1}$ | 24730 | Follow through from their (a) <br> as long as their (a) has more <br> than 2 significant figures. |  |  |  |
| (b) | $\mathbf{1}$ | 25000 |  |  |  |  |
| Total | $\mathbf{2}$ |  |  |  |  |  |

9

| Question | 14 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Part | Mark | Further Information <br> Award 1 mark for a regular <br> hexagon (tolerance $\pm 2 \mathrm{~mm}$ <br> and $\pm 2^{\circ}$ ) <br> or <br> 6 construction arcs <br> (must be arcs). |  |  |
| Total | 2 |  |  |  |


| Question | 15 |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Part | Mark | Answer |  |  |  |
|  | $\mathbf{1}$ | $\frac{10}{12}$ | $\frac{35}{42}$ | $\frac{14}{18}$ | $\frac{50}{60}$ |
|  |  |  |  |  |  |
| Total | $\mathbf{1}$ |  |  |  |  |


| Question | $\mathbf{1 6}$ |  |  |  |  |
| :---: | :---: | :---: | :--- | :---: | :---: |
| Part | Mark | Answer |  |  | Further Information |
|  | $\mathbf{2}$ | $x^{2}+8 x+15$ | Award 1 mark for: <br> $x^{2}+5 x+3 x+15$ <br> or <br> $x^{2}+a x+15$ <br> or <br> $x^{2}+8 x+b$ <br> (where $a$ and $b$ are numbers <br> not equal to 0$)$ |  |  |
| Total | $\mathbf{2}$ |  |  |  |  |


| Question | 17 |  |  |  |
| :--- | :---: | :--- | :--- | :--- |
| Part | Mark |  | Answer | Further Information |
|  | 1 | $9^{8} \div 9^{8}=9$ | $7 \times 7^{3}=7^{4}$ |  |
| $6^{8} \div 6^{2}=6^{4}$ | $2^{3} \times 2^{4}=4^{7}$ |  |  |  |
| Total | 1 |  |  |  |


| Question | 18 |  |  |
| :---: | :---: | :---: | :---: |
| Part | Mark | Answer | Further Information |
|  | 1 | No and, reason, e.g. <br> Bushra has multiplied 0.4 by 10 but hasn't multiplied 480 by 10 <br> - It should be 4800 not 48 <br> - The correct answer is 1200 but 48 divided by 4 is 12 | Any correct reason with a decision of ' $n o$ ' scores the mark. |
| Total | 1 |  |  |



| Question | 20 |  |  |
| :---: | :---: | :---: | :---: |
| Part | Mark | Answer | Further Information |
| (a) | 1 | $074\left({ }^{\circ}\right) \pm 2^{\circ}$. | Do not allow 74, must be three figures. |
| (b) | 1 |  | School $Q$ positioned 4 cm from School $P$ at a bearing of $120^{\circ}$. <br> Condone if not labelled providing there is not a choice of crosses. Award the mark if the point is $\pm 2 \mathrm{~mm}$ and $\pm 2^{\circ}$. |
| (c) | 1 |  | A circle of radius 3 cm <br> $\pm 2 \mathrm{~mm}$ centred on $M$. |
| Total | 3 |  |  |


| Question | $\mathbf{2 1}$ |  |  |  |  |
| :---: | :---: | :--- | :--- | :---: | :---: |
| Part | Mark | Answer |  |  | Further Information |
|  | $\mathbf{2}$ | $(x=) 9$ | Award 1 mark for $3 x=27$ <br> seen or equivalent correct <br> method or one correct <br> answer. |  |  |
| Total | $\mathbf{2}$ | 13 |  |  |  |


| Question | $\mathbf{2 2}$ |  |  |  |  |  |
| :--- | :---: | :--- | :--- | :---: | :---: | :---: |
| Part | Mark | Answer |  |  |  | Further Information |
|  | $\mathbf{2}$ | $36(\mathrm{~m})$ | Award 1 mark for use of <br> Pythagoras' theorem, e.g. <br> $15^{2}-12^{2}=x^{2}$ or use of <br> Pythagorean triples, e.g. 9 <br> seen. |  |  |  |
| Total | $\mathbf{2}$ |  |  |  |  |  |


| Question | 23 |  |  |
| :---: | :---: | :---: | :---: |
| Part | Mark | Answer | Further Information |
|  | 1 | Ticks Team X and gives a suitable reason, e.g. <br> - Team $Y$ have a lower median score <br> - Team $X$ have most of their scores in the 70 s and 80 s whereas team $Y$ have most of their scores in the 50 s and 60 s | Any valid comparative comment. <br> Condone <br> - team $X$ have more higher scores (than team Y ) <br> - team X has a higher average score <br> Do not allow comments that are not comparative, e.g. <br> - team $X$ has lots of high scores |
| Total | 1 |  |  |


| Question | 24 |  |  |
| :---: | :---: | :---: | :--- |
| Part | Mark | Answer |  |
|  |  |  |  |

## Stage 9 Paper 2 Mark Scheme

| Question | $\mathbf{1}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Part | Mark |  | Answer | Further Information |
|  | $\mathbf{1}$ | (\$) 136 |  |  |
| Total | $\mathbf{1}$ |  |  |  |


| Question | $\mathbf{2}$ |  |  |  |
| :---: | :---: | :--- | :--- | :---: |
| Part | Mark | Answer | Further Information |  |
|  | $\mathbf{2}$ | Any two reasons from two different <br> categories: <br> • sample size too small <br> - bias relating to selecting from just one <br> class (e.g. same subject, same age, <br> same ability level) <br> - this is not random sampling | Accept equivalent answers, <br> e.g. <br> •he should ask more people <br> -he should ask people from <br> different classes |  |
| Total | $\mathbf{2}$ | Note two marks can be <br> scored in one sentence e.g. <br> he should have asked more <br> students and used more <br> lasses. |  |  |


| Question | $\mathbf{3}$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Part | Mark | Answer |  |  |  | Further Information <br> Award 1 mark for a correct <br> answer truncated or given to <br> the wrong number of decimal <br> places or for $\frac{31}{7}$ seen. |
| Total | $\mathbf{2}$ | 4.43 |  |  |  |  |


| Question | 4 |  |
| :---: | :---: | :---: |
| Part | Mark | Answer ${ }^{\text {a }}$ Further Information |
|  | 2 |  |
| Total | 2 |  |


| Question | 5 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Part | Mark | Answer <br> 2.9 with working <br> The minimum amount of working for 2 marks would be evidence of correctly evaluating $x^{2}+3 x$ for two values of $x$ between 2.85 and 2.94 that result in answers either side of 17 (likely to be 2.85 and 2.9). | Further Information |  |
|  | 2 |  | Award 1 mark for evaluating two values of $x(2<x<3)$ possible values are given below for reference or an answer of 2.9 with no working. |  |
|  |  |  | $x$ | $x^{2}+3 x$ |
|  |  |  | 2.1 | 10.71 |
|  |  |  | 2.2 | 11.44 |
|  |  |  | 2.3 | 12.19 |
|  |  |  | 2.4 | 12.96 |
|  |  |  | 2.5 | 13.75 |
|  |  |  | 2.6 | 14.56 |
|  |  |  | 2.7 | 15.39 |
|  |  |  | 2.8 | 16.24 |
|  |  |  | 2.85 | $\mathbf{1 6 . 6 7 2 5}$ |
|  |  |  | 2.86 | 16.7596 |
|  |  |  | 2.87 | 16.8469 |
|  |  |  | 2.88 | 16.9344 |
|  |  |  | 2.89 | 17.0221 |
|  |  |  | 2.9 | 17.11 |
|  |  |  | 2.91 | 17.1981 |
|  |  |  | 2.92 | 17.2864 |
|  |  |  | 2.93 | 17.3749 |
|  |  |  | 2.94 | 17.4636 |
| Total | 2 |  |  |  |


| Question | 6 |  |  |
| :---: | :---: | :---: | :---: |
| Part | Mark | Answer | Further Information |
| (a) | 1 |  | Line must be ruled for the mark. It is not necessary to see the points plotted provided the line passes through all three points. The line does not need to pass through the point (0, 20). |
| (b) | 1 | (\$) 20 | Follow through using the intercept from their single straight line graph as long as their answer is greater than 0 . |
| (c) | 1 | (\$) 30 (per hour) | Follow through using the gradient from their single straight line graph. |
| Total | 3 |  |  |


| Question | $\mathbf{7}$ |  |  |  |
| :---: | :---: | :--- | :--- | :---: |
| Part | Mark | Answer | Further Information |  |
|  | $\mathbf{1}$ | No and a correct reason, e.g. <br> • $360^{\circ} \div 135^{\circ}$ is not an integer <br> - putting two $135^{\circ}$ angles together leaves <br> a remainder of $90^{\circ}$ <br> an octagon needs a square to tessellate <br> with <br> the only regular shapes that tessellate <br> are triangles, squares and hexagons | Do not accept "there will be <br> gaps" without supporting <br> evidence, e.g. a correct <br> calculation or diagram. |  |
| Total | $\mathbf{1}$ |  |  |  |



| Question | 9 |  |  |
| :---: | :---: | :---: | :---: |
| Part | Mark | Answer | Further Information |
|  | 2 |  | Award 1 mark for 3 out of the 4 vertices correctly plotted or for a quadrilateral enlarged by a scale factor of 3 but in the wrong place. <br> Labels are not required. |
| Total | 2 |  |  |


| Question | 10 |  |  |  |
| :--- | :---: | :--- | :--- | :---: |
| Part | Mark | Answer | Further Information |  |
|  | 1 | $\frac{5}{x}$ |  |  |
| Total | 1 |  |  |  |


| Question | 11 |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| Part | Mark | Answer |  |  |
|  | $\mathbf{1}$ | $\frac{1}{2}(4.5+5.2) \times 6$ | $4.5 \times 5.2 \times 6$ | Accept any clear indication. |
|  |  | $4.5 \times 5.2 \times 6 \div 2$ | $\frac{1}{3} \times 4.5 \times 5.2 \times 6$ |  |
| Total | $\mathbf{1}$ |  |  |  |


| Question | $\mathbf{1 2}$ |  |  |  |  |
| :---: | :---: | :--- | :--- | :---: | :---: |
| Part | Mark | Answer |  |  | Further Information |
|  | $\mathbf{1}$ | 57.8 or equivalent |  |  |  |
| Total | $\mathbf{1}$ |  |  |  |  |


| Question | 13 |  |  |
| :---: | :---: | :---: | :---: |
| Part | Mark | Answer | Further Information |
|  | 2 | 28.3 (cm) | Award 2 marks for an answer in the range 28.27 to 28.3 <br> Award 1 mark for $\begin{aligned} & \frac{2 \times \pi \times 5.5}{(2)}(+11) \\ & \text { or } \pi \times 5.5(+11) \end{aligned}$ |
| Total | 2 |  |  |


| Question | 14 |  |  |
| :---: | :---: | :---: | :---: |
| Part | Mark | Answer | Further Information |
|  | 2 | $\leftarrow \div 2 \leftarrow+3 \leftarrow \frac{m+3}{2}$ | Award 1 mark for each correct completed cell or their inverse function matching their reverse mapping. Condone any letter in place of the $m$. |
| Total | 2 |  |  |


| Question | 15 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Part | Mark |  | Answer | Further Information |
|  | $\mathbf{1}$ | Primary | Secondary | All three must be correct for <br> the mark. |
|  |  | $\square \checkmark$ | $\square$ |  |
|  |  | $\square$ | $\boxed{\checkmark}$ |  |
|  |  | $\square$ | $\boxed{\checkmark}$ |  |
| Total | $\mathbf{1}$ |  |  |  |


| Question | 16 |  |  |  |
| :--- | :---: | :--- | :--- | :--- |
| Part | Mark | Answer |  |  |
|  | $\mathbf{2}$ | $94(\%)$ | Award 1 mark for <br> $\frac{66.93-34.5}{34.5}$ or 0.94 |  |
| Total | $\mathbf{2}$ |  |  |  |


| Question | 17 |  |  |  |
| :--- | :---: | :--- | :--- | :---: |
| Part | Mark | Answer | Further Information |  |
|  | $\mathbf{2}$ | 50 | Award 1 mark for <br> $20 \div 2$ seen or implied |  |
| Total | $\mathbf{2}$ |  |  |  |


| Question | 18 |  |  |
| :---: | :---: | :---: | :---: |
| Part | Mark | Answer | Further Information |
|  | 2 | $(x=) \frac{y}{5}-t \text { or }(x=) \frac{y-5 t}{5}$ | Award 1 mark for a correct first step that affects both sides of the equation, e.g. <br> - $\frac{y}{5}=t+x$ <br> - $y-5 t=5 x$ |
| Total | 2 |  |  |



| Question | 20 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Part | Mark | Answer |  | Further Information |
|  | 1 | True $\square$ False <br> True False <br> True $\square$ False |  | Both are required for the mark. |
| Total | 1 |  |  |  |


| Question | 21 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Part | Mark | Answer | Further Information |  |  |  |  |  |
|  | 2 |  | Award 2 marks for all five numbers correct. Numbers can be in any position in the correct spinner. <br> Award 1 mark for three correct numbers or for a correctly completed sample space diagram: |  |  |  |  |  |
|  |  |  |  | 1 | 5 | 3 | 2 | 9 |
|  |  |  | 7 | 7,1 | 7,5 | 7,3 | 7,2 | 7,9 |
|  |  |  | 4 | 4,1 | 4,5 | 4,3 | 4,2 | 4,9 |
|  |  |  | 2 | 2,1 | 2,5 | 2,3 | 2,2 | 2,9 |
| Total | 2 |  |  |  |  |  |  |  |


| Question | 22 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Part |  | Answer |  |  |  |  | Further Information |
| (a) |  | $x$ | -4 | 0 | 2 | 6 | Award 1 mark for 2 correct values in the table. |
|  |  | $y$ | 0 | 2 | 3 | 5 |  |
| (b) | 1 |  |  |  |  |  | Line needs to extend between at least 3 out of the 4 points and must be ruled for the mark. <br> Follow through their values as long as they are in a straight line. |
| (c) | 1 | $\begin{aligned} & x=-2 \\ & y=1 \end{aligned}$ |  |  |  |  | Both are required for the mark and depend on graph values seen. <br> If incorrect, follow through from any single line intersecting $y+x=-1$ (must be within the grid). <br> Algebraic solution not evidenced by graph scores zero. |
| Total | 4 |  |  |  |  |  |  |




| Question | $\mathbf{2 5}$ | Answer |  |
| :---: | :---: | :--- | :--- |$|$| Further Information |
| :--- |
| Part |
| Mark |

## Stage 9 Paper 3 Mark Scheme

| Question | Mark | Answer |
| :---: | :---: | :--- |
| $\mathbf{1}$ | $1 / 2$ | 5.1 |
| 2 | $1 / 2$ | $x(3 x-4)$ or $3 x^{2}-4 x$ |
| 3 | $1 / 2$ | 4 |
| 4 | $1 / 2$ | 6 |
| 5 | $1 / 2$ | (Customers are) increasing or going up or rising |
| 6 | $1 / 2$ | 11 |
| 7 | $1 / 2$ | $(\$) 3.30$ |
| 8 | $1 / 2$ | Angle, centre and direction (of rotation) |
| 9 | $1 / 2$ | 3.6 |
| 10 | $1 / 2$ | $63\left({ }^{\circ}\right)$ and 4 (cm) |
| 11 | $1 / 2$ | $6 x^{5}$ |
| 12 | $1 / 2$ | $\frac{1}{10} \quad 10 \% \quad 0.01$ |
| 13 | $1 / 2$ | Thursday and Friday (or Thurs and Fri) |
| 14 | $1 / 2$ | $2 x-4$ or $2(x-2)$ |
| 15 | $1 / 2$ | $280(\mathrm{~km})$ |
| 16 | $1 / 2$ | $3 n-1$ |
| 17 | $1 / 2$ | $\frac{1}{4}$ or 0.25 |
| 18 | $1 / 2$ | $c=2 n$ or $n=\frac{c}{2}$ |
| 19 | $1 / 2$ | 12 |
| 20 | $1 / 2$ | $3200\left(\mathrm{~mm}{ }^{3}\right)$ |

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