

SECONDARY ENTRANCE ASSESSMENT 2019 MATHEMATICS

SPECIMEN PAPER 2

MARK SCHEME

SECTION I

| Item No. | Correct Response:<br>1 mark                                                         | Strand |
|----------|-------------------------------------------------------------------------------------|--------|
| 1.       | 3 tenths                                                                            | Number |
| 2.       | 3 000                                                                               | Number |
| 3.       | 24                                                                                  | Number |
| 4.       | 160                                                                                 | Number |
| 5.       | 40                                                                                  | Number |
| 6.       | $\frac{1}{10}$                                                                      | Number |
| 7.       | \$30.40                                                                             | Number |
| 8.       | 10 962                                                                              | Number |
| 9.       |  | Number |

| Item No.                                                                            | Correct Response:<br>1 mark                                                                                                     | Strand                                                                              |    |            |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|------------|
| 10.                                                                                 | 5                                                                                                                               | Number                                                                              |    |            |
| 11.                                                                                 | 11cm                                                                                                                            | Measurement                                                                         |    |            |
| 12.                                                                                 | 3                                                                                                                               | Measurement                                                                         |    |            |
| 13.                                                                                 | 12 <sup>th</sup> May                                                                                                            | Measurement                                                                         |    |            |
| 14.                                                                                 | 1 400 millilitres                                                                                                               | Measurement                                                                         |    |            |
| 15.                                                                                 | 10                                                                                                                              | Geometry                                                                            |    |            |
| 16.                                                                                 | A                                                                                                                               | Geometry                                                                            |    |            |
| 17.                                                                                 | 24                                                                                                                              | Geometry                                                                            |    |            |
| 18.                                                                                 | <table><tr><td></td><td>13</td></tr></table> |  | 13 | Statistics |
|  | 13                                                                                                                              |                                                                                     |    |            |
| 19.                                                                                 | Car                                                                                                                             | Statistics                                                                          |    |            |
| 20.                                                                                 | Mary                                                                                                                            | Statistics                                                                          |    |            |

## SECTION II

### 21. Number

| Correct Response:<br>2 marks | Partially Correct Response:<br>1 mark                                                                                                                                         | Incorrect Response:<br>0 mark |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| $\sqrt{49}$ $\sqrt{25}$      | <ul style="list-style-type: none"> <li><math>\sqrt{49}</math> with second missing term incorrect</li> <li><math>\sqrt{25}</math> with first missing term incorrect</li> </ul> | 7, 5                          |

### 22. Number

| Correct Response:<br>2 marks                                        | Partially Correct Response:<br>1 mark | Incorrect Response:<br>0 mark |
|---------------------------------------------------------------------|---------------------------------------|-------------------------------|
| $125 \div 5 = 25$<br>$25 \times 4 = 100$<br>Rhoda bought 100 roses. | $125 \div 5 = 25$                     | $125 \times 4$<br><br>500     |

## 23. Number

| Correct Response:<br>2 marks                                                                                                                                                                                                                                                                                                                                                                                                     | Partially Correct Response:<br>1 mark                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Incorrect Response:<br>0 mark |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <ul style="list-style-type: none"> <li>• <math>100\% - 33\frac{1}{3}\% = 66\frac{2}{3}\%</math> <b>OR</b> <math>1 - \frac{1}{3} = \frac{2}{3}</math><br/> <math>\frac{2}{3} \times 180 = 120</math><br/> John had 120 marbles remaining.</li> <li>• <math>33\frac{1}{3}\%</math> of 180 = 60 <b>OR</b> <math>\frac{1}{3} \times 180 = 60</math><br/> <math>180 - 60 = 120</math><br/> John had 120 marbles remaining.</li> </ul> | <ul style="list-style-type: none"> <li>• <math>100\% - 33\frac{1}{3}\% = 66\frac{2}{3}\%</math> <b>OR</b> <math>1 - \frac{1}{3} = \frac{2}{3}</math></li> <li>• <math>33\frac{1}{3}\%</math> of 180 = 60 <b>OR</b> <math>\frac{1}{3} \times 180 = 60</math><br/> <math>180 - 60 = \text{“His answer”}</math></li> <li>• <math>33\frac{1}{3}\%</math> of 180 = “His answer”<br/> <b>OR</b><br/> <math>\frac{1}{3} \times 180 = \text{“His answer”}</math><br/> <math>180 - \text{“His answer” (follow through)}</math></li> </ul> | $180 - 33\frac{1}{3}$         |

**24. Number**

| <b>Correct Response:<br/>2 marks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Partially Correct Response:<br/>1 mark</b>                                                                                                                                                                                                                                                                              | <b>Incorrect Response:<br/>0 mark</b> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| <ul style="list-style-type: none"><li>No. of Passengers<br/>= <math>\\$2\,160 \div \\$60 = 36</math><br/>No. of 12-seater maxi-taxis hired<br/>= <math>36 \div 12 = 3</math></li><li>Cost of hiring one maxi-taxi<br/>= <math>\\$60 \times 12 = \\$720</math><br/>No. of 12-seater maxi-taxis hired<br/>= <math>\\$2\,160 \div \\$720 = 3</math></li><li>Cost of filling a seat on multiple trips by 1 maxi-taxi<br/>= <math>\\$2\,160 \div 12 = \\$180</math><br/>No. of trips for which each seat is used<br/>= <math>\\$180 \div \\$60 = 3</math></li></ul> <p><b>No. of trips by one maxi-taxi</b> being used repeatedly is the same as the <b>no. of maxis-taxis needed to make one trip each</b> for hire.</p> | <ul style="list-style-type: none"><li>No. of Passengers = <math>\\$2\,160 \div \\$60 = 36</math></li><li>No. of 12-seater maxi-taxis hired<br/>= <math>\\$2\,160 \div \\$720</math><br/>= “His answer”</li><li>Cost of filling a seat on multiple trips by 1 maxi-taxi = <math>\\$2\,160 \div 12 = \\$180</math></li></ul> |                                       |

**25. Number**

| <b>Correct Response:<br/>2 marks</b>                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Partially Correct Response:<br/>1 mark</b>                                                                                                                                                                                                                  | <b>Incorrect Response:<br/>0 mark</b>                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>100% profit on cost price = <math>\\$3\,125.00</math><br/>Selling price = Cost Price + Profit<br/>= <math>\\$3\,125.00 + \\$3\,125.00 = \\$6\,250.00</math></li><li>Cost of 1 bicycle = <math>\\$3\,125 \div 5 = \\$625</math><br/>Selling price of 1 bicycle including 100% profit<br/>= <math>\\$625 \times 2 = \\$1\,250</math><br/>Selling price of 5 bicycles = <math>\\$1\,250 \times 5 = \\$6\,250</math></li></ul> | <ul style="list-style-type: none"><li>100% profit = <math>\\$3\,125.00</math></li><li>Cost of 1 bicycle = <math>\\$3\,125 \div 5 = \\$625</math><br/>Selling price of 1 bicycle including 100% profit<br/>= <math>\\$625 \times 2 = \\$1\,250</math></li></ul> | <ul style="list-style-type: none"><li><math>\\$3\,125 \times 5</math></li></ul> |

## 26. Number

| Correct Response:<br>3 marks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Partially Correct Response:<br>2 marks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Partially Correct Response:<br>1 mark                                                                                                                                                                                                                                                                                                                                                                                   | Incorrect Response:<br>0 mark                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Fraction of working pens<br/> <math>= 1 - \frac{2}{5} = \frac{3}{5}</math><br/>           Fraction of working red pens<br/> <math>= \frac{1}{4} \times \frac{3}{5} = \frac{3}{20}</math><br/> <math>\frac{3}{20}</math> represents 36 working red pens<br/> <math>\frac{1}{20}</math> represents <math>36 \div 3 = 12</math><br/>           The Whole or <math>\frac{20}{20}</math> represents <math>12 \times 20 = 240</math></li> <li>36 red pens represent <math>\frac{1}{4}</math> of the working pens<br/>           Therefore, the total number of working pens<br/> <math>= 36 \times 4 = 144</math><br/>           Fraction of working pens out of the total<br/> <math>= 1 - \frac{2}{5} = \frac{3}{5}</math><br/>           144 pens represent <math>\frac{3}{5}</math> of the total pens bought<br/> <math>\frac{1}{5}</math> of the total pens bought<br/> <math>= 144 \div 3 = 48</math><br/>           The total number of pens bought<br/> <math>= 48 \times 5 = 240</math></li> </ul> | <ul style="list-style-type: none"> <li>Fraction of working pens<br/> <math>= 1 - \frac{2}{5} = \frac{3}{5}</math><br/>           Fraction of working red pens<br/> <math>= \frac{1}{4} \times \frac{3}{5} = \frac{3}{20}</math><br/> <math>\frac{3}{20}</math> represents 36 working red pens</li> <li>36 red pens represent <math>\frac{1}{4}</math> of the working pens<br/>           Therefore, the total number of working pens<br/> <math>= 36 \times 4 = 144</math><br/>           Fraction of working pens out of the total<br/> <math>= 1 - \frac{2}{5} = \frac{3}{5}</math><br/>           144 pens represent <math>\frac{3}{5}</math> of the total pens bought</li> </ul> | <ul style="list-style-type: none"> <li>Fraction of working pens<br/> <math>= 1 - \frac{2}{5} = \frac{3}{5}</math><br/>           Fraction of working red pens<br/> <math>= \frac{1}{4} \times \frac{3}{5} = \frac{3}{20}</math></li> <li>36 red pens represent <math>\frac{1}{4}</math> of the working pens<br/>           Therefore, the total number of working pens<br/> <math>= 36 \times 4 = 144</math></li> </ul> | <ul style="list-style-type: none"> <li><math>\frac{1}{4} + \frac{2}{5}</math></li> <li><math>\frac{1}{4} \times 36</math></li> <li>Random operations between pairs of numbers that appear in the item</li> </ul> |

## 27. Number

| Correct Response:<br>3 marks                                                                                                                                                                                                                                                                                                                                                                                                       | Partially Correct Response:<br>2 marks                                                                                                                                                                                                                                                                                                                                                                                      | Partially Correct Response:<br>1 mark                                                                                                                                                                                                                                                                                                                                                                  | Incorrect Response:<br>0 mark |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <p>Pieces of string used from the roll:<br/> <math>\frac{1}{4} = \frac{6}{24}</math> , <math>\frac{3}{8} = \frac{9}{24}</math> , <math>\frac{7}{24}</math></p> <p>Longest piece: <math>\frac{9}{24}</math> , Shortest piece: <math>\frac{6}{24}</math></p> <p>Difference between the shortest and longest pieces of string used<br/> <math>= \frac{9}{24} - \frac{6}{24}</math><br/> <math>= \frac{3}{24} = \frac{1}{8}</math></p> | <p>Pieces of string used from the roll:<br/> <math>\frac{1}{4} = \frac{6}{24}</math> , <math>\frac{3}{8} = \frac{9}{24}</math> , <math>\frac{7}{24}</math></p> <p>Longest piece: <math>\frac{9}{24}</math> , Shortest piece: <math>\frac{6}{24}</math></p> <p>Difference between the shortest and longest pieces of string used<br/> <math>= \frac{9}{24} - \frac{6}{24}</math><br/> <math>= \text{“His answer”}</math></p> | <ul style="list-style-type: none"> <li>Pieces of string used from the roll:<br/> <math>\frac{1}{4} = \frac{6}{24}</math> , <math>\frac{3}{8} = \frac{9}{24}</math> , <math>\frac{7}{24}</math></li> <li>Calculating a difference using only one of the correct fractions <b>and</b> showing the correct “follow through”.<br/> e.g. <math>\frac{7}{24} - \frac{6}{24} = \frac{1}{24}</math></li> </ul> | $\frac{9}{24} + \frac{6}{24}$ |

## 28. Number

| Correct Response:<br>3 marks                                                                                                                                                                                             | Partially Correct Response:<br>2 marks                                                                                                                                | Partially Correct Response:<br>1 mark                                                                                                                                | Incorrect Response:<br>0 mark |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <p>Marcy’s age: <math>8\text{yrs} + 10\text{yrs} = 18\text{yrs}</math></p> <p>Dan’s age: <math>18\text{yrs} - 4\text{yrs} = 14\text{yrs}</math></p> <p>Patrick’s age: <math>14\text{yrs} \div 2 = 7\text{yrs}</math></p> | <ul style="list-style-type: none"> <li>Any two ages correct</li> <li>“His answer” for Marcy’s age but correct follow through for Dan’s and Patrick’s ages.</li> </ul> | <ul style="list-style-type: none"> <li>Any one age correct</li> <li>“His answer” for Marcy’s and Dan’s ages but correct follow through for Patrick’s age.</li> </ul> | No age correct                |

## 29. Number

| Correct Response:<br>3 marks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Partially Correct Response:<br>2 marks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Partially Correct Response:<br>1 mark                                                                                                                                                                                                                                                                                                                                                                                                                                      | Incorrect Response:<br>0 mark |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <ul style="list-style-type: none"> <li>5 pencils and 5 rulers cost<br/>“His answer”<br/><br/>5 pencils and 5 rulers <b>cost \$40</b><br/><br/>10 pencils and 10 rulers cost<br/><math>\\$40 \times 2 = \\$80</math></li> <li>5 pencils and 5 rulers cost<br/>“His answer”<br/><br/>1 ruler and 1 pencil cost <math>\\$40 \div 5 = \\$8</math><br/><br/>Multiply by 10 to find for ten rulers and ten pencils: <math>\\$8 \times 10 = \\$80</math></li> <li>Guess and Check (or Trial and Error) Method to find cost of one pencil and one ruler, e.g.:<br/><b>Guess</b> for Darren’s Supplies:<br/>3 pencils and 2 rulers cost \$19<br/><math>3 \times \underline{3} + 2 \times \underline{5} = 19</math><br/><br/>Cost of one pencil - \$3<br/>Cost of one ruler - \$5<br/><br/><b>Check</b> for Ann’s Supplies<br/><math>3 \times 2 + 3 \times 5 = \\$21</math><br/><br/>Cost of one pencil and one ruler<br/><math>= \\$3 + \\$5 = \\$8</math><br/>Cost of 10 pencils and 10 rulers<br/><math>= \\$8 \times 10 = \\$80</math></li> </ul> | <ul style="list-style-type: none"> <li>5 pencils and 5 rulers cost<br/>“His answer”<br/><br/>5 pencils and 5 rulers <b>cost \$40</b></li> <li>5 pencils and 5 rulers cost<br/>“His answer”<br/><br/>1 ruler and 1 pencil cost <math>\\$40 \div 5 = \\$8</math></li> <li>Guess and Check (or Trial and Error) Method to find cost of one pencil and one ruler, e.g.:<br/><b>Guess</b> for Darren’s Supplies:<br/>3 pencils and 2 rulers cost \$19<br/><math>3 \times \underline{3} + 2 \times \underline{5} = 19</math><br/><br/>Cost of one pencil - \$3<br/>Cost of one ruler - \$5<br/><br/><b>Check</b> for Ann’s Supplies<br/><math>3 \times 2 + 3 \times 5 = \\$21</math></li> </ul> | <ul style="list-style-type: none"> <li>5 pencils and 5 rulers cost<br/>“His answer”</li> <li>5 pencils and 5 rulers cost<br/>“His answer”</li> <li>Guess and Check (or Trial and Error) Method to find cost of one pencil and one ruler, e.g.:<br/><b>Guess</b> for Darren’s Supplies:<br/>3 pencils and 2 rulers cost \$19<br/><br/><math>3 \times \square + 2 \times \square = 19</math><br/>(incorrect answers for cost of one ruler and cost of one pencil)</li> </ul> |                               |



### 30. Number

| Correct Response:<br>3 marks                                                                                                                                                                                                                                                                                                  | Partially Correct Response:<br>2 marks                                                                                                                                                                                                                                                                     | Partially Correct Response:<br>1 mark                                                    | Incorrect Response:<br>0 mark |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------|
| <p>Jabari is correct.</p> <p>The product will be 5 or more if it is multiplied by 1 or any number greater than one.</p> <p>The product will be smaller than 5 if it is multiplied by any number less than 1.<br/>e.g. “zero” or “a proper fraction”</p> <p><b>Note:</b> e.g. “zero” or “a proper fraction” must be given.</p> | <ul style="list-style-type: none"> <li>Jabari is correct.</li> </ul> <p>Partially correct explanation is given.</p> <p>No example is given.</p> <ul style="list-style-type: none"> <li>Jabari is correct.</li> </ul> <p>No correct explanation is given.</p> <p>At least one correct example is given.</p> | <p>Jabari is correct.</p> <p><b>Neither</b> explanation <b>nor</b> example is given.</p> | <p>Alana is correct.</p>      |

### 31. Measurement

| Correct Response:<br>2 marks                                                                                         | Partially Correct Response:<br>1 mark                                                                                                                                                       | Incorrect Response:<br>0 mark                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Correct time on clock: 10:48</p> <p>Start time:</p> $\begin{array}{r} 10:48 \\ - 1:55 \\ \hline 8:53 \end{array}$ | <ul style="list-style-type: none"> <li>Correct time on clock: 10:48</li> <li>Subtracting 1:55 from 10:38 correctly</li> </ul> $\begin{array}{r} 10:38 \\ - 1:55 \\ \hline 8:43 \end{array}$ | <ul style="list-style-type: none"> <li>Adding 1:55 to 10:48</li> </ul> $\begin{array}{r} 10:48 \\ + 1:55 \\ \hline 12:43 \end{array}$ <ul style="list-style-type: none"> <li>Adding 1:55 to 10:38</li> </ul> $\begin{array}{r} 10:38 \\ + 1:55 \\ \hline 12:33 \end{array}$ |

### 32. Measurement

| Correct Response:<br>2 marks                                                                                                                                                                                                                                                                                                                                            | Partially Correct Response:<br>1 mark                                                                                                                                    | Incorrect Response:<br>0 mark |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <ul style="list-style-type: none"> <li>4 litres = 4 000 millilitres<br/> <math>4\,000 \div 250 = 16</math><br/> Tariq finishes the 4 litres of sorrel in 16 days.</li> <li>1000 millilitres = 1 litre<br/> 250 millilitres = <math>\frac{1}{4}</math> litre<br/> <math>4 \div \frac{1}{4} = 16</math><br/> Tariq finishes the 4 litres of sorrel in 16 days.</li> </ul> | <ul style="list-style-type: none"> <li>4 litres = 4 000 millilitres</li> <li>1000 millilitres = 1 litre<br/> 250 millilitres = <math>\frac{1}{4}</math> litre</li> </ul> | $250 \div 4$                  |

### 33. Measurement

| Correct Response:<br>3 marks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Partially Correct Response:<br>2 marks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Partially Correct Response:<br>1 mark                                                                                                                                                                                                                                                                                                                                                                                                               | Incorrect Response:<br>0 mark                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Block A weighs 0.94 kg</p> <p>Conversion of grams to kilograms or vice versa</p> <p>Block B weighs 160 g less than Block A:<br/>Mass of Block B<br/> <math>= 0.94 \text{ kg} - 0.16 \text{ kg}</math><br/> <math>= 0.78 \text{ kg}</math></p> <p>Block C weighs 700 g more than Block B:<br/>Mass of Block C<br/> <math>= 0.78 \text{ kg} + 0.7 \text{ kg}</math><br/> <math>= 1.48 \text{ kg}</math></p> <p>Total mass of Blocks A, B and C<br/> <math>= 0.94 \text{ kg} + 0.78 \text{ kg} + 1.48 \text{ kg}</math><br/> <math>= 3.2 \text{ kg}</math></p> <p>Total mass is 3 kg to the nearest kilogram.</p> | <ul style="list-style-type: none"> <li>Block A weighs 0.94 kg</li> </ul> <p>Conversion of grams to kilograms or vice versa</p> <p>Block B weighs 160 g less than Block A:<br/>Mass of Block B<br/> <math>= 0.94 \text{ kg} - 0.16 \text{ kg}</math><br/> <math>= 0.78 \text{ kg}</math></p> <p>Block C weighs 700 g more than Block B:<br/>Mass of Block C<br/> <math>= 0.78 \text{ kg} + 0.7 \text{ kg}</math><br/> <math>= 1.48 \text{ kg}</math></p> <ul style="list-style-type: none"> <li>Inaccurate answer for mass of Block B or C but accurate addition of all three blocks (follow through)</li> </ul> | <ul style="list-style-type: none"> <li>Block A weighs 0.94 kg</li> </ul> <p>Conversion of grams to kilograms or vice versa</p> <p>Block B weighs 160 g less than Block A<br/>Mass of Block B<br/> <math>= 0.94 \text{ kg} - 0.16 \text{ kg}</math><br/> <math>= 0.78 \text{ kg}</math></p> <ul style="list-style-type: none"> <li>Inaccurate answer for mass of Block B and C but accurate addition of all three blocks (follow through)</li> </ul> | <p>Mass of Block A<br/> <math>= 0.94 \text{ kg} + 0.16 \text{ kg}</math><br/> <math>= 1.1 \text{ kg}</math></p> <p>Mass of Block B<br/> <math>= 1.1 + 0.7 = 1.8 \text{ kg}</math></p> |

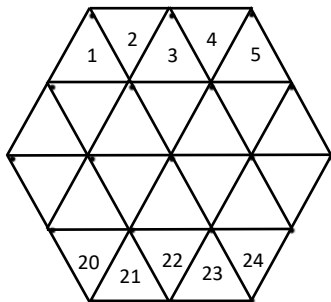
### 34. Measurement

| Correct Response:<br>3 marks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Partially Correct Response:<br>2 marks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Partially Correct Response:<br>1 mark                                                                                                                                                                                       | Incorrect Response:<br>0 mark |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <ul style="list-style-type: none"> <li>No. of 15 cm × 15 cm tiles needed<br/>= <math>90\,000 \div 225</math><br/>= 400<br/>No. of boxes needed<br/>= <math>400 \div 40</math><br/>= 10<br/>Cost of tiles needed<br/>= <math>\\$50 \times 10</math><br/>= \$500</li> <li>No. of 20 cm × 20 cm tiles needed<br/>= <math>90\,000 \div 400</math><br/>= 225<br/>No. of boxes needed<br/>= <math>225 \div 25</math><br/>= 9<br/>Cost of tiles needed<br/>= <math>\\$55 \times 9</math><br/>= \$495</li> <li>It is \$5 cheaper to tile the area of the floor using the 20 cm × 20 cm tile.</li> </ul> | <ul style="list-style-type: none"> <li>No. of 15 cm × 15 cm tiles needed<br/>= <math>90\,000 \div 225</math><br/>= 400<br/>No. of boxes needed<br/>= <math>400 \div 40</math><br/>= 10<br/>Cost of tiles needed<br/>= <math>\\$50 \times 10</math><br/>= \$500</li> <li>No. of 20 cm × 20 cm tiles needed<br/>= <math>90\,000 \div 400</math><br/>= 225<br/>No. of boxes needed<br/>= <math>225 \div 25</math><br/>= 9<br/>Cost of tiles needed<br/>= <math>\\$55 \times 9</math><br/>= \$495</li> <li>No conclusion on which tile is cheaper.</li> <li>Inaccurate answer for one of the two options but correct conclusion based on working.</li> </ul> | <p>Cost of 15 cm × 15 cm tiles needed with “His answer”.</p> <p>Cost of 20 cm × 20 cm tiles needed with “His answer”.</p> <p>Inaccurate answer for both options but correct conclusion based on <b>logical</b> working.</p> |                               |

### 35. Geometry

**Correct Response:**  
**2 marks**

- 24 tiles were used to cover the hexagon.

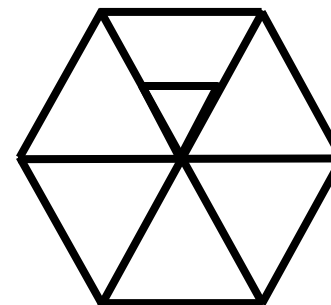


**Partially Correct Response:**  
**1 mark**

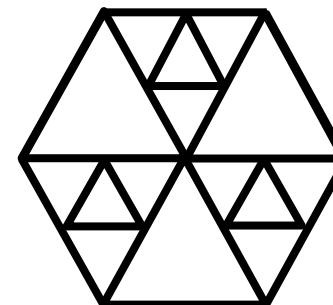
- Drawing of triangles inside the hexagon but counting inaccurately.
- Drawing of triangles inside the hexagon but not counting.

**Incorrect Response:**  
**0 mark**

- Drawing of triangles inside the hexagon of different sizes.  
e.g.

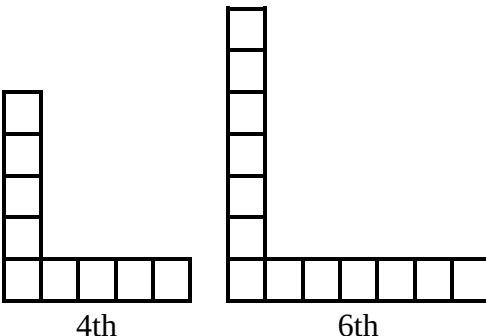


OR



- Attempting to draw another shape in the hexagon.

### 36. Geometry

| Correct Response:<br>2 marks                                                                            | Partially Correct Response:<br>1 mark                                                                                                  | Incorrect Response:<br>0 mark                                          |
|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
|  <p>4th</p> <p>6th</p> | <ul style="list-style-type: none"> <li>• 4<sup>th</sup> element correct only</li> <li>• 6<sup>th</sup> element correct only</li> </ul> | <ul style="list-style-type: none"> <li>• No element correct</li> </ul> |

### 37. Geometry

| Correct Response:<br>3 marks                                                                                         | Partially Correct Response:<br>2 marks                                                                                                                                                                                                               | Partially Correct Response:<br>1 mark | Incorrect Response:<br>0 mark                                                                   |
|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------|
| <p>Triangles B and D are similar.</p> <p>They are both equilateral triangles.</p> <p>All their angles are equal.</p> | <ul style="list-style-type: none"> <li>• Triangles B and D are similar.</li> </ul> <p>They are both equilateral triangles.</p> <ul style="list-style-type: none"> <li>• Triangles B and D are similar.</li> </ul> <p>All their angles are equal.</p> | <p>Triangles B and D are similar.</p> | <ul style="list-style-type: none"> <li>• Any other pairs given as similar triangles.</li> </ul> |

### 38. Statistics

| Correct Response:<br>2 marks                                                                    | Partially Correct Response:<br>1 mark                                                                                                                                                                                                                                                                  | Incorrect Response:<br>0 mark                                        |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| <p>Scale: <math>30 \div 5 = 6</math></p> <p>Jeremy's Medals: <math>6 \times 3.5 = 21</math></p> | <ul style="list-style-type: none"> <li>• Scale: <math>30 \div 5 = 6</math></li> <li>• Scale: <math>30 \div 5 = 6</math><br/>Jeremy's Medals: <math>6 \times 3.5 = \text{"His answer"}</math></li> <li>• Scale: <math>30 \div 5 = 6</math><br/>Jeremy's Medals: <math>6 \times 4 = 24</math></li> </ul> | <ul style="list-style-type: none"> <li>• 3</li> <li>• 3.5</li> </ul> |

### 39. Statistics

| Correct Response:<br>3 marks                                                                                                                                                                                                                                                               | Partially Correct Response:<br>2 marks                                                                                                                                                                                                                                                 | Partially Correct Response:<br>1 mark                                                                                                                                                                                                                                                              | Incorrect Response:<br>0 mark                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Identify Chocolate – 150<br/>Identify Vanilla – 75<br/>100 strawberry ice-creams were sold.</li> <li>• Eliminating Chocolate and Vanilla as liked most and least, respectively.<br/>Deducing that 100 strawberry ice-creams were sold.</li> </ul> | <ul style="list-style-type: none"> <li>• Identify both Chocolate <b>and</b> Vanilla correctly:<br/>Chocolate – 150<br/>Vanilla – 75</li> <li>• Eliminating Chocolate <b>and</b> Vanilla as liked most and least, respectively.<br/>Making no deduction or a wrong deduction</li> </ul> | <ul style="list-style-type: none"> <li>• Identify <b>either</b> Chocolate <b>or</b> Vanilla correctly:<br/>Chocolate – 150<br/>Vanilla – 75</li> <li>• Eliminating <b>either</b> Chocolate as liked most <b>or</b> Vanilla as liked least.<br/>Making no deduction or a wrong deduction</li> </ul> | <ul style="list-style-type: none"> <li>• 150</li> <li>• 75</li> <li>• 125</li> </ul> |

#### 40. Statistics

| <b>Correct Response:<br/>3 marks</b>                                                                                                                                                                                                                                                  | <b>Partially Correct Response:<br/>2 marks</b>                                                                                                                                                                                                                                     | <b>Partially Correct Response:<br/>1 mark</b>                         | <b>Incorrect Response:<br/>0 mark</b>                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------|
| <p>Before adding 4 more cars, the modal toy is the video games.</p> <p>4 more cars will increase the number sold (frequency) to 20. However, the video games remain the toy with the highest number sold (frequency) which is 32.</p> <p>Therefore the modal toy does not change.</p> | <p>Before adding 4 more cars, the modal toy is the video games.</p> <p>4 more cars will increase the number sold (frequency) to 20. However, the video games remain the toy with the highest number sold (frequency) which is 32.</p> <p>No conclusion given on the modal toy.</p> | <p>The modal toy is the video games.</p> <p>No explanation given.</p> | <p>The incorrect modal toy selected is the doll, car or board games.</p> |



## SECTION III

| 41. Number                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                  |                                                                                                                                                                                               |                                                                                           |                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------|
| Correct Response:<br>4 marks                                                                                                                                                                                                                                                                                                                                                                    | Partially Correct Response:<br>3 marks                                                                                                                                                                                                                           | Partially Correct Response:<br>2 marks                                                                                                                                                        | Partially Correct Response:<br>1 mark                                                     | Incorrect Response:<br>0 mark |
| <p>No. of the students who borrowed 3 books or more<br/> <math>= 63 + 81 = 144</math></p> <p><math>\frac{3}{5}</math> of students = 144</p> <p><math>\frac{1}{5} = 144 \div 3 = 48</math></p> <p>Total no. of students<br/> <math>= 48 \times 5 = 240</math></p> <p>No. of students not borrowing any book<br/> <math>= 240 - (34 + 36 + 63 + 81)</math><br/> <math>= 240 - 214 = 26</math></p> | <p>No. of the students who borrowed 3 books or more<br/> <math>= 63 + 81 = 144</math></p> <p><math>\frac{3}{5}</math> of students = 144</p> <p><math>\frac{1}{5} = 144 \div 3 = 48</math></p> <p>Total no. of students<br/> <math>= 48 \times 5 = 240</math></p> | <p>No. of the students who borrowed 3 books or more<br/> <math>= 63 + 81 = 144</math></p> <p><math>\frac{3}{5}</math> of students = 144</p> <p><math>\frac{1}{5} = 144 \div 3 = 48</math></p> | <p>No. of the students who borrowed 3 books or more<br/> <math>= 63 + 81 = 144</math></p> |                               |

## 42. Number

| Correct Response:<br>4 marks                                                                                                                                                                                                                                                                                                                                                                                                                                 | Partially Correct Response:<br>3 marks                                                                                                                                                                                                                                                    | Partially Correct Response:<br>2 marks                                                                                                                                                                                 | Partially Correct Response:<br>1 mark                                      | Incorrect Response:<br>0 mark |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------|
| <p>Rate at time and a half<br/>= <math>\\$60 \times 1.5 = \\$90</math></p> <p>Overtime wage<br/>= <math>\\$3\,480 - (\\$60 \times 40)</math><br/>= <math>\\$3\,480 - \\$2\,400</math><br/>= <math>\\$1\,080</math></p> <p>Total overtime hours<br/>= <math>1\,080 \div 90 = 12</math></p> <p>No. of hours worked on Saturday = Twice the no. worked on Sunday<br/>= <math>(12 \div 3) \times 2</math><br/>= <math>4 \times 2</math><br/>= <math>8</math></p> | <p>Rate at time and a half<br/>= <math>\\$60 \times 1.5 = \\$90</math></p> <p>Overtime wage<br/>= <math>\\$3\,480 - (\\$60 \times 40)</math><br/>= <math>\\$3\,480 - \\$2\,400</math><br/>= <math>\\$1\,080</math></p> <p>Total overtime hours<br/>= <math>1\,080 \div 90 = 12</math></p> | <p>Rate at time and a half<br/>= <math>\\$60 \times 1.5 = \\$90</math></p> <p>Overtime wage<br/>= <math>\\$3\,480 - (\\$60 \times 40)</math><br/>= <math>\\$3\,480 - \\$2\,400</math><br/>= <math>\\$1\,080</math></p> | <p>Rate at time and a half<br/>= <math>\\$60 \times 1.5 = \\$90</math></p> |                               |

### 43. Measurement

| Correct Response:<br>4 marks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Partially Correct Response:<br>3marks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Partially Correct Response:<br>2 marks                                                                                                                                                                                                                                                         | Partially Correct Response:<br>1 mark                                                             | Incorrect Response:<br>0 mark |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------|
| Perimeter of Rectangle<br>= Perimeter of Square<br>$= 9 \text{ cm} \times 4$<br>$= 36 \text{ cm}$<br><br>Rectangle:<br>Length + Width<br>$= \text{Perimeter} \div 2$<br>$= 18 \text{ cm}$<br>Width $= 18 \text{ cm} \div 3 = 6 \text{ cm}$<br>Length $= 6 \text{ cm} \times 2 = 12 \text{ cm}$<br><br>Area of Rectangle<br>$= 6 \text{ cm} \times 12 \text{ cm} = 72 \text{ cm}^2$<br>Area of Square<br>$= 9 \text{ cm} \times 9 \text{ cm} = 81 \text{ cm}^2$<br><br>Difference in areas<br>$= 81 \text{ cm}^2 - 72 \text{ cm}^2$<br>$= 9 \text{ cm}^2$ | <ul style="list-style-type: none"> <li>Perimeter of Rectangle<br/>               = Perimeter of Square<br/> <math>= 9 \text{ cm} \times 4</math><br/> <math>= 36 \text{ cm}</math></li> </ul> Rectangle:<br>Length + Width<br>$= \text{Perimeter} \div 2$<br>$= 18 \text{ cm}$<br>Width $= 18 \text{ cm} \div 3 = 6 \text{ cm}$<br>Length $= 6 \text{ cm} \times 2 = 12 \text{ cm}$<br><br>Area of Rectangle<br>$= 6 \text{ cm} \times 12 \text{ cm} = 72 \text{ cm}^2$<br>Area of Square<br>$= 9 \text{ cm} \times 9 \text{ cm} = 81 \text{ cm}^2$<br><br><ul style="list-style-type: none"> <li>Correct reasoning with errors in calculation.</li> </ul> | Perimeter of Rectangle<br>= Perimeter of Square<br>$= 9 \text{ cm} \times 4$<br>$= 36 \text{ cm}$<br><br>Rectangle:<br>Length + Width<br>$= \text{Perimeter} \div 2$<br>$= 18 \text{ cm}$<br>Width $= 18 \text{ cm} \div 3 = 6 \text{ cm}$<br>Length $= 6 \text{ cm} \times 2 = 12 \text{ cm}$ | Perimeter of Rectangle<br>= Perimeter of Square<br>$= 9 \text{ cm} \times 4$<br>$= 36 \text{ cm}$ |                               |

## 44. Geometry

| Correct Response:<br>4 marks | Partially Correct Response:<br>3marks                                                                                                                                                                                                                                                                                                                                                                                                        | Partially Correct Response:<br>2 marks                                                                                                                                                                                                                                                                                                                                                                | Partially Correct Response:<br>1 mark                                                                                  | Incorrect Response:<br>0 mark     |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
|                              | <ul style="list-style-type: none"> <li>• Accurate lines of symmetry drawn for A &amp; B and A &amp; C.</li> </ul> <p>Shape C is partially completed.<br/>(2 of 3 sides drawn accurately)</p> <ul style="list-style-type: none"> <li>• Accurate line of symmetry drawn for A &amp; B.</li> </ul> <p>Inaccurate line of symmetry drawn for A &amp; C.</p> <p>Shape C is completed correctly based on line of symmetry drawn for A &amp; C.</p> | <ul style="list-style-type: none"> <li>• Accurate lines of symmetry drawn for A &amp; B and A &amp; C.</li> </ul> <ul style="list-style-type: none"> <li>• Accurate line of symmetry drawn for A &amp; B.</li> </ul> <p>Inaccurate line of symmetry drawn for A &amp; C.</p> <p>Shape C is partially completed based on line of symmetry drawn for A &amp; C.<br/>(2 of 3 sides drawn accurately)</p> | <ul style="list-style-type: none"> <li>• Accurate line of symmetry drawn for A &amp; B <b>OR</b> A &amp; C.</li> </ul> | <p>No line of symmetry drawn.</p> |

## 45. Statistics

| Correct Response:<br>4 marks                                                                                                                                                                                                                                                                                                                                                                                       | Partially Correct<br>Response:<br>3marks                                                                                                                                                                                                                                                                                                                                                                                                                             | Partially Correct<br>Response:<br>2 marks                                                                                                                                                                              | Partially Correct<br>Response:<br>1 mark                                                                                  | Incorrect Response:<br>0 mark |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <p>Mean no. of runs made before the 4<sup>th</sup> inning<br/> <math>= \frac{80+40+60}{3} = \frac{180}{3} = 60</math></p> <p>Mean no. of runs made after the 4<sup>th</sup> inning<br/> <math>= 60 + 5 = 65</math></p> <p>Total no. of runs made after the 4<sup>th</sup> inning<br/> <math>= 65 \times 4 = 260</math></p> <p>No. of runs made in the 4<sup>th</sup> inning<br/> <math>= 260 - 180 = 80</math></p> | <ul style="list-style-type: none"> <li>Mean no. of runs made before the 4<sup>th</sup> inning<br/> <math>= \frac{80+40+60}{3} = \frac{180}{3} = 60</math></li> </ul> <p>Mean no. of runs made after the 4<sup>th</sup> inning<br/> <math>= 60 + 5 = 65</math></p> <p>Total no. of runs made after the 4<sup>th</sup> inning<br/> <math>= 65 \times 4 = 260</math></p> <ul style="list-style-type: none"> <li>Correct reasoning with errors in calculation</li> </ul> | <p>Mean no. of runs made before the 4<sup>th</sup> inning<br/> <math>= \frac{80+40+60}{3} = \frac{180}{3} = 60</math></p> <p>Mean no. of runs made after the 4<sup>th</sup> inning<br/> <math>= 60 + 5 = 65</math></p> | <p>Mean no. of runs made before the 4<sup>th</sup> inning<br/> <math>= \frac{80+40+60}{3} = \frac{180}{3} = 60</math></p> |                               |