



Astrea Academy Trust  
INSPIRING BEYOND MEASURE

Name

Class

Tutor  
Group

# YEAR 7 MATHEMATICS

## Retrieval Booklet

### Half Term 2

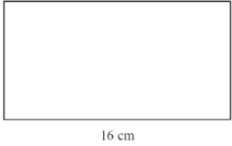
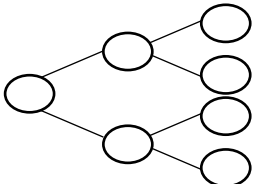
|        | Year 7                       |        |           |  |        |        |                        |   |                                       |           |         |                  |
|--------|------------------------------|--------|-----------|--|--------|--------|------------------------|---|---------------------------------------|-----------|---------|------------------|
|        | Week 1                       | Week 2 | Week 3    | Week 4                                       | Week 5 | Week 6 | Week 7                 | Week 8  | Week 9                                | Week 10   | Week 11 | Week 12          |
| Autumn | Number                       |        |           |  |        |        |                        |   |                                       |           |         |                  |
|        | Place Value                  |        |           | Addition, Subtraction and their Applications |        |        |                        | Multiplication, Division and their Applications |                                       |           |         | Negative Numbers |
| Spring | Number                       |        |           |  |        |        | Algebra                |   |                                       |           |         |                  |
|        | Negative Numbers (continued) |        | Fractions |  |        |        | Algebraic Manipulation |   |                                       | Sequences |         |                  |
| Summer | Geometry and Measures        |        |           |  | Number |        |                        |   | Statistics and Probability            |           |         |                  |
|        | Angles                       |        |           |  | FDP    |        |                        |   | Probability, Venns and Two-Way Tables |           |         |                  |

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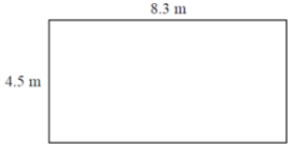
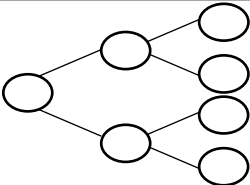
# Cumulative R&R: Retrieve & Retain

|    | Week 1  | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 |
|----|---|--------|--------|--------|--------|--------|--------|--------|
| 1  | Recognise the place value of any number                 |        |        |        |        |        |        |        |
| 2  | Comparing negative numbers                              |        |        |        |        |        |        |        |
| 3  | Rounding  |        |        |        |        |        |        |        |
| 4  | Median  |        |        |        |        |        |        |        |
| 5  | Mental addition and subtraction                         |        |        |        |        |        |        |        |
| 6  | Written methods for addition and subtraction (integers) |        |        |        |        |        |        |        |
| 7  | Written methods for addition and subtraction (decimals) |        |        |        |        |        |        |        |
| 8  | Perimeter   |        |        |        |        |        |        |        |
| 9  | Tables and timetables                                   |        |        |        |        |        |        |        |
| 10 | Frequency trees   |        |        |        |        |        |        |        |

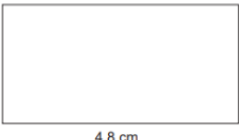
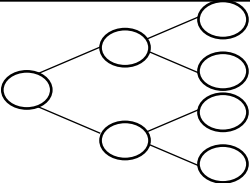
## Week 1

| <p><b>Question 1</b><br/>Write down the value of the 6 in the number 13 629</p>   | <p><b>Question 2</b><br/>Insert the correct symbol, &lt; or &gt; between the following values:<br/><br/>0                      -3</p>       |       |       |   |            |       |       |       |        |       |       |       |  |
|---|---|-------|-------|---|------------|-------|-------|-------|--------|-------|-------|-------|--|
| <p><b>Question 3</b><br/>Round 376 to the nearest 100.</p>  | <p><b>Question 4</b><br/>Work out the median of this set of numbers:<br/>3   2   1   4   5</p>  |       |       |   |            |       |       |       |        |       |       |       |  |
| <p><b>Question 5</b><br/>Calculate <math>4 + 7</math></p>   | <p><b>Question 6</b><br/>Calculate <math>452 + 383</math></p>   |       |       |   |            |       |       |       |        |       |       |       |  |
| <p><b>Question 7</b><br/>Calculate <math>78.12 + 35.84</math></p>   | <p><b>Question 8</b><br/>Calculate the perimeter:</p>  |       |       |   |            |       |       |       |        |       |       |       |  |
| <p><b>Question 9</b> How long does train A take?</p> <table border="1" data-bbox="105 1839 502 1943"> <thead> <tr> <th>Train</th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>Birmingham</td> <td>06 35</td> <td>07 00</td> <td>07 15</td> </tr> <tr> <td>London</td> <td>08 09</td> <td>08 39</td> <td>08 48</td> </tr> </tbody> </table> | Train   | A     | B     | C | Birmingham | 06 35 | 07 00 | 07 15 | London | 08 09 | 08 39 | 08 48 | <p><b>Question 10</b><br/>120 people were asked if they prefer tea or coffee. 58 of the people were male. 35 of the females preferred tea. 65 of the people preferred coffee. Complete the frequency tree.</p>  |
| Train   | A   | B     | C     |   |            |       |       |       |        |       |       |       |  |
| Birmingham  | 06 35   | 07 00 | 07 15 |   |            |       |       |       |        |       |       |       |  |
| London  | 08 09   | 08 39 | 08 48 |   |            |       |       |       |        |       |       |       |  |

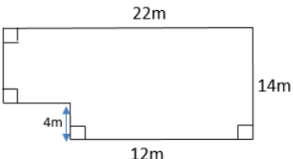
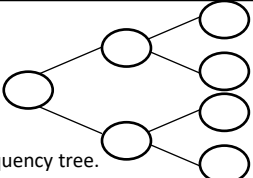
## Week 2

| <p><b>Question 1</b><br/>Write down the value of the 4 in the number 9048</p>   | <p><b>Question 2</b><br/>Insert the correct symbol, &lt; or &gt; between the following values:<br/><br/>-8            -5</p>                  |       |       |   |            |       |       |       |        |       |       |       |   |
|---|---|-------|-------|---|------------|-------|-------|-------|--------|-------|-------|-------|---|
| <p><b>Question 3</b><br/>Round 5829 to the nearest 1000.</p>  | <p><b>Question 4</b><br/>Work out the median of this set of numbers:<br/>6 3 3 4 2 5 4</p>  |       |       |   |            |       |       |       |        |       |       |       |   |
| <p><b>Question 5</b><br/>Calculate <math>18 + 9</math></p>  | <p><b>Question 6</b><br/>Calculate <math>741 - 228</math></p>   |       |       |   |            |       |       |       |        |       |       |       |   |
| <p><b>Question 7</b><br/>Calculate <math>912.4 + 9.3</math></p>   | <p><b>Question 8</b><br/>Calculate the perimeter:<br/></p> |       |       |   |            |       |       |       |        |       |       |       |   |
| <p><b>Question 9</b> How long does train B take?</p> <table border="1" data-bbox="105 882 502 990"> <thead> <tr> <th>Train</th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>Birmingham</td> <td>06 35</td> <td>07 00</td> <td>07 15</td> </tr> <tr> <td>London</td> <td>08 09</td> <td>08 39</td> <td>08 48</td> </tr> </tbody> </table> | Train   | A     | B     | C | Birmingham | 06 35 | 07 00 | 07 15 | London | 08 09 | 08 39 | 08 48 | <p><b>Question 10</b><br/>Caleb asks 80 people if they prefer cola A or B. 41 of the people asked were male. 22 of the 50 people that prefer cola A are female. Complete the frequency tree.<br/></p> |
| Train   | A   | B     | C     |   |            |       |       |       |        |       |       |       |   |
| Birmingham  | 06 35   | 07 00 | 07 15 |   |            |       |       |       |        |       |       |       |   |
| London  | 08 09   | 08 39 | 08 48 |   |            |       |       |       |        |       |       |       |   |

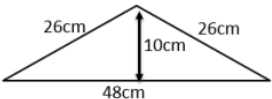
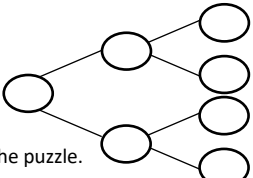
## Week 3

| <p><b>Question 1</b><br/>Write down the value of the 2 in the number 328 407</p>  | <p><b>Question 2</b><br/>Insert the correct symbol, &lt; or &gt; between the following values:<br/><br/>-27            -30</p>                  |       |       |   |            |       |       |       |        |       |       |       |   |
|---|---|-------|-------|---|------------|-------|-------|-------|--------|-------|-------|-------|---|
| <p><b>Question 3</b><br/>Round 2437 to the nearest 100.</p>   | <p><b>Question 4</b><br/>Work out the median of this set of numbers:<br/>63 65 65 70 72 86 90</p>   |       |       |   |            |       |       |       |        |       |       |       |   |
| <p><b>Question 5</b><br/>Calculate <math>24 - 7</math></p>  | <p><b>Question 6</b><br/>Calculate <math>861 + 39</math></p>  |       |       |   |            |       |       |       |        |       |       |       |   |
| <p><b>Question 7</b><br/>Calculate <math>893.57 - 35.04</math></p>  | <p><b>Question 8</b><br/>Calculate the perimeter:<br/></p> |       |       |   |            |       |       |       |        |       |       |       |   |
| <p><b>Question 9</b> How long does train C take?</p> <table border="1" data-bbox="105 1868 502 1976"> <thead> <tr> <th>Train</th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>Birmingham</td> <td>06 35</td> <td>07 00</td> <td>07 15</td> </tr> <tr> <td>London</td> <td>08 09</td> <td>08 39</td> <td>08 48</td> </tr> </tbody> </table> | Train   | A     | B     | C | Birmingham | 06 35 | 07 00 | 07 15 | London | 08 09 | 08 39 | 08 48 | <p><b>Question 10</b><br/>500 people were surveyed.<br/>53 people are left handed.<br/>26 males are left handed.<br/>231 of the people are male.<br/>Complete the frequency tree.<br/></p> |
| Train   | A   | B     | C     |   |            |       |       |       |        |       |       |       |   |
| Birmingham  | 06 35   | 07 00 | 07 15 |   |            |       |       |       |        |       |       |       |   |
| London  | 08 09   | 08 39 | 08 48 |   |            |       |       |       |        |       |       |       |   |

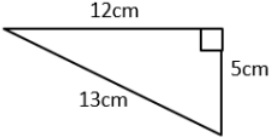
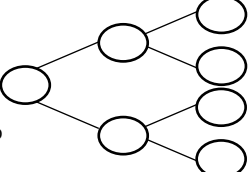
## Week 4

|   |   |               |  |      |      |               |  |
|---|---|---------------|--|------|------|---------------|--|
| <p><b>Question 1</b><br/>Write down the value of the 9 in the number 79 813.</p>  | <p><b>Question 2</b><br/>Insert the correct symbol, &lt; or &gt; between the following values:<br/><br/>-26                  2</p>            |               |  |      |      |               |  |
| <p><b>Question 3</b><br/>Round 1485 to the nearest 1000.</p>  | <p><b>Question 4</b><br/>Work out the median of this set of numbers:<br/>5   18   10   14   22   12</p>                                       |               |  |      |      |               |  |
| <p><b>Question 5</b><br/>Calculate <math>24 - 8</math></p>  | <p><b>Question 6</b><br/>Calculate <math>8710 - 374</math></p>  |               |  |      |      |               |  |
| <p><b>Question 7</b><br/>Calculate <math>176.91 + 5.2</math></p>  | <p><b>Question 8</b><br/>Calculate the perimeter:<br/></p> |               |  |      |      |               |  |
| <p><b>Question 9</b> Write down the distance between<br/>Los Angeles                  Los Angeles and San Francisco</p> <table border="1" data-bbox="97 913 611 1006"> <tr> <td>4373</td> <td>Miami</td> <td></td> </tr> <tr> <td>4539</td> <td>2133</td> <td>San Francisco</td> </tr> </table> | 4373  | Miami         |  | 4539 | 2133 | San Francisco | <p><b>Question 10</b><br/>80 people were asked if they like football. 47 of these people were men, the rest are women. 7 of the men do not like football. 65 of the 80 people like football. Complete the frequency tree.<br/></p> |
| 4373  | Miami   |               |  |      |      |               |  |
| 4539  | 2133  | San Francisco |  |      |      |               |  |

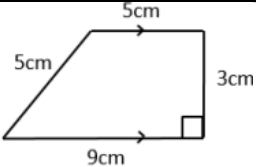
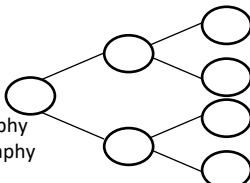
## Week 5

|  |   |               |  |      |      |               |  |
|--|---|---------------|--|------|------|---------------|--|
| <p><b>Question 1</b><br/>Write down the value of the 2 in the number 2 983 154.</p>  | <p><b>Question 2</b><br/>Insert the correct symbol, &lt; or &gt; between the following values:<br/><br/>-10                  -13</p>            |               |  |      |      |               |  |
| <p><b>Question 3</b><br/>Write 2.79 correct to 1 decimal place.</p>  | <p><b>Question 4</b><br/>Work out the median of this set of numbers:<br/>2   10   7   6   10   9</p>  |               |  |      |      |               |  |
| <p><b>Question 5</b><br/>Calculate <math>65 + 6</math></p>   | <p><b>Question 6</b><br/>Calculate <math>1042 + 861</math></p>  |               |  |      |      |               |  |
| <p><b>Question 7</b><br/>Calculate <math>1056.28 - 35.3</math></p>   | <p><b>Question 8</b><br/>Calculate the perimeter:<br/></p> |               |  |      |      |               |  |
| <p><b>Question 9</b> Write down the distance between<br/>Los Angeles                  Los Angeles and Miami</p> <table border="1" data-bbox="97 1881 611 1974"> <tr> <td>4373</td> <td>Miami</td> <td></td> </tr> <tr> <td>4539</td> <td>2133</td> <td>San Francisco</td> </tr> </table> | 4373  | Miami         |  | 4539 | 2133 | San Francisco | <p><b>Question 10</b><br/>120 people were given 3 minutes to solve a puzzle. 45 people who tried to solve the puzzle were under 18 years old. 78 people solved this puzzle. 32 people age 18 and over did not solve the puzzle. Complete the frequency tree.<br/></p> |
| 4373   | Miami   |               |  |      |      |               |  |
| 4539   | 2133  | San Francisco |  |      |      |               |  |

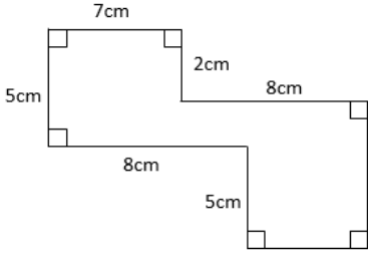
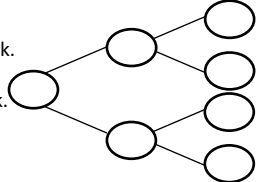
## Week 6

|   |   |       |       |       |           |       |       |       |          |       |       |       |  |
|---|---|-------|-------|-------|-----------|-------|-------|-------|----------|-------|-------|-------|--|
| <p><b>Question 1</b><br/>Write down the value of the 8 in the number 97 824.</p>  | <p><b>Question 2</b><br/>Insert the correct symbol, &lt; or &gt; between the following values:<br/><br/>-17                  -16</p>      |       |       |       |           |       |       |       |          |       |       |       |  |
| <p><b>Question 3</b><br/>Write 0.4726 correct to 1 decimal place.</p>   | <p><b>Question 4</b><br/>Work out the median of this set of numbers:<br/>45 38 43 39 40 39</p>  |       |       |       |           |       |       |       |          |       |       |       |  |
| <p><b>Question 5</b><br/>Calculate <math>57 - 9</math></p>  | <p><b>Question 6</b><br/>Calculate <math>6179 + 83</math></p>   |       |       |       |           |       |       |       |          |       |       |       |  |
| <p><b>Question 7</b><br/>Calculate <math>8619.3 - 41.58</math></p>  | <p><b>Question 8</b><br/>Calculate the perimeter:</p>  |       |       |       |           |       |       |       |          |       |       |       |  |
| <p><b>Question 9</b> How long does the 06 53 train take to get to Nuneaton?</p> <table border="1" data-bbox="372 919 701 1002"> <tr> <td>Birmingham</td> <td>06 23</td> <td>06 53</td> <td>07 23</td> </tr> <tr> <td>Coleshill</td> <td>06 35</td> <td>07 05</td> <td>07 35</td> </tr> <tr> <td>Nuneaton</td> <td>07 00</td> <td>07 22</td> <td>07 51</td> </tr> </table> | Birmingham  | 06 23 | 06 53 | 07 23 | Coleshill | 06 35 | 07 05 | 07 35 | Nuneaton | 07 00 | 07 22 | 07 51 | <p><b>Question 10</b><br/>200 people travelled to an event by bus or by train. 58 people travelled by train. Of the people who travelled by bus, 40 were late. 71 people were late to the event. Complete the frequency tree.</p>  |
| Birmingham  | 06 23   | 06 53 | 07 23 |       |           |       |       |       |          |       |       |       |  |
| Coleshill   | 06 35   | 07 05 | 07 35 |       |           |       |       |       |          |       |       |       |  |
| Nuneaton  | 07 00   | 07 22 | 07 51 |       |           |       |       |       |          |       |       |       |  |

## Week 7

|  |   |             |  |      |      |             |  |
|--|---|-------------|--|------|------|-------------|--|
| <p><b>Question 1</b><br/>Write down the value of the 8 in the number 4 987 235</p>   | <p><b>Question 2</b><br/>Insert the correct symbol, &lt; or &gt; between the following values:<br/><br/>-17                  65</p>         |             |  |      |      |             |  |
| <p><b>Question 3</b><br/>Write 3.84761 correct to 3 decimal places.</p>  | <p><b>Question 4</b><br/>Work out the median of this set of numbers:<br/>5 3 10 2 7 3</p>   |             |  |      |      |             |  |
| <p><b>Question 5</b><br/>Calculate <math>8 + 53</math></p>   | <p><b>Question 6</b><br/>Calculate <math>4132 - 83</math></p>   |             |  |      |      |             |  |
| <p><b>Question 7</b><br/>Calculate <math>65.781 + 109.2</math></p>   | <p><b>Question 8</b><br/>Calculate the perimeter:</p>  |             |  |      |      |             |  |
| <p><b>Question 9</b> Write down the distance between Boston Chicago and Los Angeles</p> <table border="1" data-bbox="97 1887 605 1984"> <tr> <td>1589</td> <td>Chicago</td> <td></td> </tr> <tr> <td>4891</td> <td>3366</td> <td>Los Angeles</td> </tr> </table> | 1589  | Chicago     |  | 4891 | 3366 | Los Angeles | <p><b>Question 10</b><br/>50 year 11 students were surveyed about whether they studied Geography or not. 21 students studied Geography. 15 students studied Geography and Art. 19 students didn't study Geography or Art. Complete the frequency tree.</p>  |
| 1589   | Chicago   |             |  |      |      |             |  |
| 4891   | 3366  | Los Angeles |  |      |      |             |  |

# Week 8

|   |  |       |       |       |           |       |       |       |          |       |       |       |   |
|---|--|-------|-------|-------|-----------|-------|-------|-------|----------|-------|-------|-------|---|
| <p><b>Question 1</b><br/>Write down the value of the 1 in the number 14 287</p>   | <p><b>Question 2</b><br/>Insert the correct symbol, &lt; or &gt; between the following values:<br/><br/>-45                      -42</p> |       |       |       |           |       |       |       |          |       |       |       |   |
| <p><b>Question 3</b><br/>Write 18.1693 correct to 2 decimal places.</p>   | <p><b>Question 4</b><br/>Work out the median of this set of numbers:<br/>3   5   8   9   12   12   16</p>                                |       |       |       |           |       |       |       |          |       |       |       |   |
| <p><b>Question 5</b><br/>Calculate <math>93 - 6</math></p>  | <p><b>Question 6</b><br/>Calculate <math>983 + 2012</math></p>   |       |       |       |           |       |       |       |          |       |       |       |   |
| <p><b>Question 7</b><br/>Calculate <math>134.98 - 29.09</math></p>  | <p><b>Question 8</b><br/>Calculate the perimeter:</p>  |       |       |       |           |       |       |       |          |       |       |       |   |
| <p><b>Question 9</b> How long does the 07 23 train take to get to Coleshill?</p> <table border="1" data-bbox="371 1108 706 1191"> <tr> <td>Birmingham</td> <td>06 23</td> <td>06 53</td> <td>07 23</td> </tr> <tr> <td>Coleshill</td> <td>06 35</td> <td>07 05</td> <td>07 35</td> </tr> <tr> <td>Nuneaton</td> <td>07 00</td> <td>07 22</td> <td>07 51</td> </tr> </table> | Birmingham   | 06 23 | 06 53 | 07 23 | Coleshill | 06 35 | 07 05 | 07 35 | Nuneaton | 07 00 | 07 22 | 07 51 | <p><b>Question 10</b><br/>160 students in Y10 had some homework. 73 of these students are boys. 64 of the 160 students did not do their homework. 39 of the girls did do their homework. Complete the frequency tree.</p>  |
| Birmingham  | 06 23  | 06 53 | 07 23 |       |           |       |       |       |          |       |       |       |   |
| Coleshill   | 06 35  | 07 05 | 07 35 |       |           |       |       |       |          |       |       |       |   |
| Nuneaton  | 07 00  | 07 22 | 07 51 |       |           |       |       |       |          |       |       |       |   |

# N3 Multiplication, Division and their Applications

## Knowledge Organiser

### KEY VOCABULARY LIST

| KEY VOCABULARY LIST           |   |
|-------------------------------|---|
| <b>Multiplication</b>         | An arithmetical operation, defined initially in terms of repeated addition.   |
| <b>Division</b>               | The arithmetical process of dividing one number into another number.  |
| <b>Metric</b>                 | An international decimal system of weights and measures.  |
| <b>Product</b>                | The result of multiplying two or more numbers or terms together.  |
| <b>Decimal</b>                | A number that is not whole, as it lies between whole numbers.   |
| <b>Area</b>                   | The measure of space in two dimensions contained within a boundary.   |
| <b>Mean</b>                   | The single value that if all numbers in a list are changed into, maintains the total of the list.                               |
| <b>Square number</b>          | An integer multiplied by itself makes a square number.  |
| <b>Cube number</b>            | An integer multiplied by itself and then itself again makes a cube number.  |
| <b>Square root</b>            | A value that, when multiplied by itself, gives the original number.   |
| <b>Cube root</b>              | A value that, when multiplied by itself and then by itself again, gives the original number.                                    |
| <b>Operation</b>              | Operations in mathematics refer to the basic mathematical actions or processes used to perform calculations and solve problems. |
| <b>Multiples</b>              | The result of multiplying a positive integer by another positive integer.   |
| <b>Lowest Common Multiple</b> | The smallest integer which is a multiple of two or more positive integers.  |
| <b>Factors</b>                | A factor is a positive integer that will divide exactly into a given positive integer.  |
| <b>Highest Common Factor</b>  | The largest integer which is a factor of two or more given positive integers.   |
| <b>Prime Number</b>           | A positive integer with precisely two distinct factors.   |
| <b>Composite Number</b>       | A positive integer with three or more factors.  |

# N3 Multiplication, Division and their Applications

## Knowledge Organiser Quiz

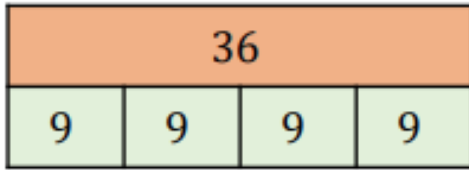
| Question  | Answer |
|---|--------|
| <b>Multiplication</b> is an _____ operation, defined initially in terms of _____ addition.                                  |        |
| <b>Division</b> is the arithmetical process of _____ one number _____ another number.                                       |        |
| The _____ system is an international decimal system of _____ and _____.   |        |
| A <b>product</b> is the _____ of _____ two or more numbers of terms together.   |        |
| A <b>decimal</b> is number that is not _____, as it lies _____ whole numbers.   |        |
| The <b>area</b> is a measure of _____ in two dimensions contained within a boundary.  |        |
| The _____ is the single value that if all numbers in a list are changed into, maintains the total of the list.              |        |
| An integer multiplied by _____ makes a <b>square number</b> .   |        |
| An integer multiplied by _____ and then by itself _____ makes a <b>cube number</b> .  |        |
| A <b>square root</b> is a value that, when multiplied by _____, gives the original number.                                  |        |
| A <b>cube root</b> is a value that, when multiplied by _____ and then by itself _____, gives the original number.           |        |
| <b>Operations</b> in mathematics refer to the basic mathematical actions or _____ used to perform _____ and solve problems. |        |
| <b>Multiples</b> are the _____ of multiplying a positive integer by another positive integer.                               |        |
| The <b>lowest common multiple</b> is the _____ integer which is a _____ of two or more positive integers.                   |        |
| A <b>factor</b> is a positive integer that will divide _____ into a given positive integer.                                 |        |
| The <b>highest common factor</b> is the _____ integer which is a _____ of two or more given positive integers.              |        |
| A <b>prime number</b> is a positive integer with precisely _____ distinct _____.  |        |
| A <b>composite number</b> is a positive integer with _____ or more factors.   |        |



# N3 Multiplication, Division and their Applications

## End of Booklet Review

1. Write the fact family for this bar model.



$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

2. Answer the following:

a)  $24 \div 6 =$

b)  $10 \times 2 =$

c)  $5 \div 5 =$

d)  $8 \times 12 =$

e)  $72 \div 9 =$

f)  $6 \times 7 =$

g)  $11 \times 12 =$

h)  $108 \div 12 =$

i)  $51 \times 0 =$

j)  $22 \times 1 =$

3. Fill in the blanks:

a)  $24 \times 10 =$

b)  $240 \div 10 =$

c)  $248 \times \underline{\quad} = 2480$

d)  $248 \times 100 =$

e)   $\times 100 = 9600$

f)  $73 \times \underline{\quad} = 73000$

g)  $1.18 \times 100 =$

h)  $126.4 \div 100 =$

i)  $7.83 \times \underline{\quad} = 78.3$

j)   $\div 1000 = 0.131$

4. Given that  $27 \times 34 = 918$ , work out:

a)  $2.7 \times 34 =$

d)  $918 \div 270 =$

b)  $270 \times 34 =$

e)  $918 \div 2.7 =$

c)  $918 \div 340 =$

f)  $2.7 \times 3.4 =$

# N3 Multiplication, Division and their Applications

## End of Booklet Review

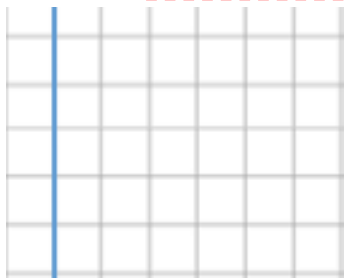
5. Complete the following tables:

| Centimetres | Metres | Millilitres | Litres | Grams | Kilograms |
|-------------|--------|-------------|--------|-------|-----------|
| 100         |        | 1000        |        | 1000  |           |
| 170         |        | 350         |        | 1400  |           |
|             | 11     |             | 9      |       | 12        |

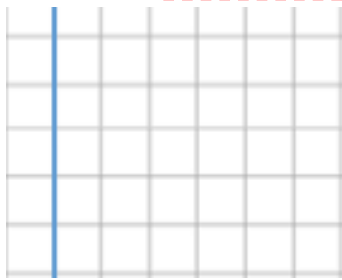
| Millimetres | Metres | Millilitres | Centilitres | Grams | Kilograms |
|-------------|--------|-------------|-------------|-------|-----------|
| 1000        |        | 100         |             | 150   |           |
| 150         |        | 480         |             | 1.6   |           |
|             | 12     |             | 22          |       | 3.2       |

6. Calculate:

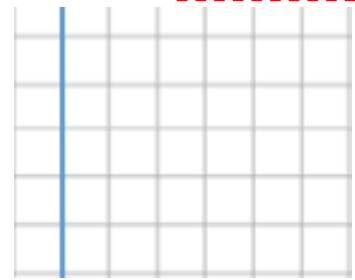
a)  $34 \times 7 =$



b)  $23 \times 35 =$

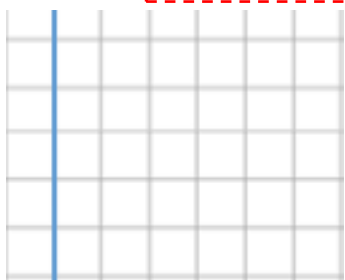


c)  $341 \times 56 =$

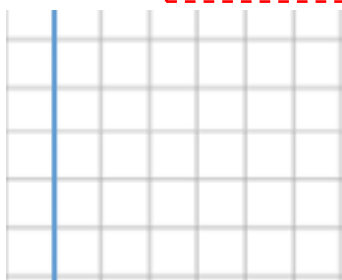


7. Calculate:

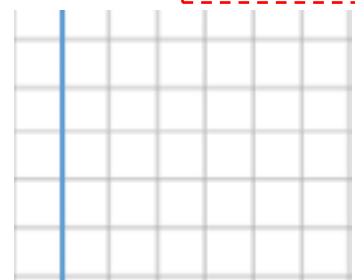
a)  $2.4 \times 7 =$



b)  $7.3 \times 35 =$



c)  $3.4 \times 5.6 =$



8. Calculate, leaving your answers as decimals where appropriate:

a)  $135 \div 3 =$

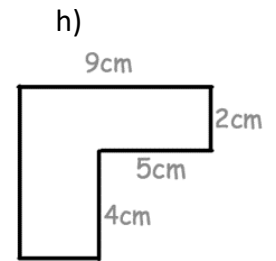
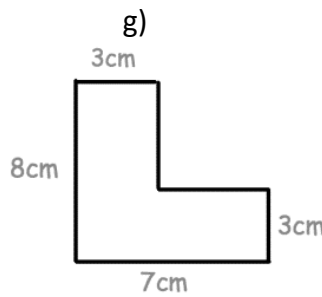
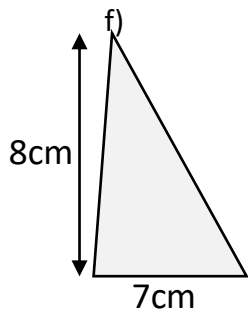
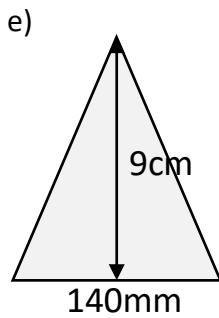
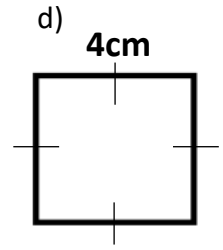
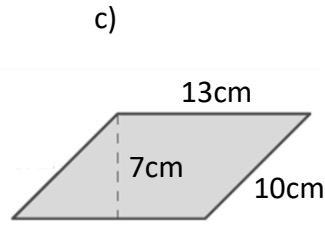
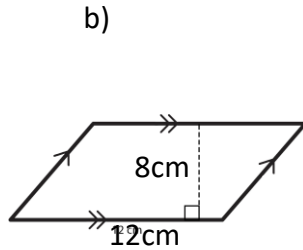
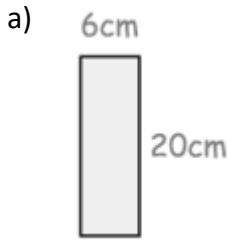
b)  $222 \div 5 =$

c)  $76.81 \div 4 =$

# N3 Multiplication, Division and their Applications

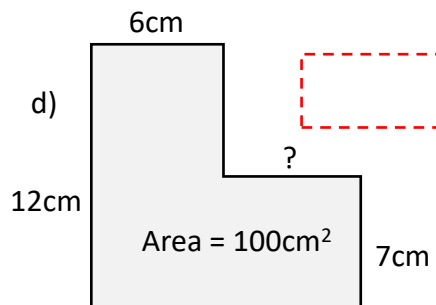
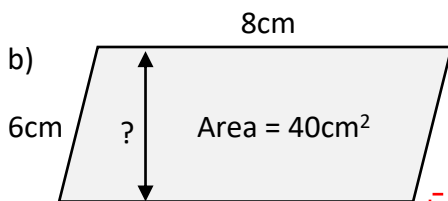
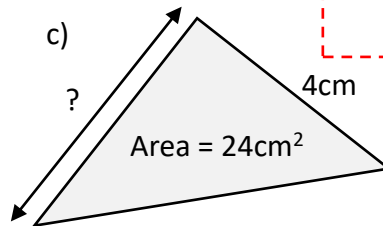
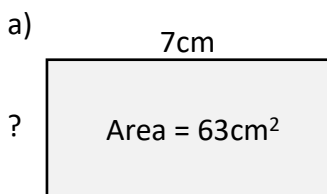
## End of Booklet Review

9. Work out the areas of each of these shapes:



10.

Given the areas of the shapes below, find the missing side lengths:



# N3 Multiplication, Division and their Applications

## End of Booklet Review

11.

a) Calculate the mean of 3, 5, 6, 7, 14

b) Calculate the mean of 3, 5, 6, 7, 8

c) Seven numbers have a mean of 11. Six of the numbers are 3, 8, 14, 18 and 20. What is the seventh number?

d) The mean of 5 numbers is 11. Another number is added and the mean is now 12. What number was added?

e) The mean of 7 numbers is 3. The mean of a different 3 numbers is 5. What is the mean for all of the numbers?

12. Answer the following:

a)  $2^2 =$

b)  $5^3 =$

c)  $\sqrt{36} =$

d)  $\sqrt[3]{27} =$

13. Answer the following:

a)  $6 - 3 + 2 =$

b)  $6 + 3 \times 2 =$

c)  $6 \div 3 \times 2 =$

d)  $8 \times (4 \div 2) =$

e)  $(8 - 4) \div 2 =$

f)  $4 + 3^2 - 2 =$

g)  $2 \times (5 + 10)^2 =$

14.

a) List the first six multiples of 7.

b) List all the factors of 36.

c) Work out the highest common factor of 18 and 32.

d) Work out the lowest common multiple of 6 and 15.

# N3 Multiplication, Division and their Applications

## End of Booklet Review

15.

Circle the prime numbers in the list below.

2    6    7    10    13    17    22    25    30    31    45    49    51    52    56

16.

Calculate:

a)  $60 \times 0.1 =$

b)  $53 \times 0.1 =$

c)  $400 \times 0.01 =$

d)  $330 \times 0.01 =$

e)  $18 \div 0.5 =$

f)  $23 \div 0.1 =$

g)  $40 \div 0.2 =$

# N3 Multiplication, Division and their Applications

## End of Booklet Review

| Q1 | Q2  | Q3  | Q4 | Q5 | Q6 | Q7 | Q8 |
|----|-----|-----|----|----|----|----|----|
| /4 | /10 | /10 | /6 | /6 | /3 | /3 | /3 |
| A  | B   | C   | D  | E  | F  | G  | H  |

| Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 | Q16 |
|----|-----|-----|-----|-----|-----|-----|-----|
| /8 | /4  | /5  | /4  | /7  | /4  | /1  | /7  |
| I  | J   | K   | L   | M   | N   | O   | P   |

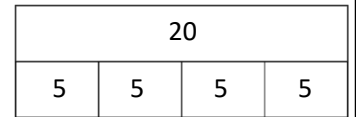
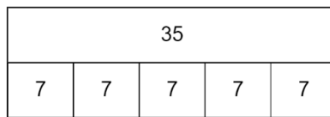
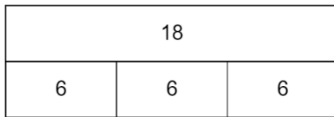
Complete these sections for the questions you didn't get full marks on

# N3 Multiplication, Division and their Applications

## End of Booklet Follow Up Questions

### Section A

Write the fact families for each bar model.



$_____ \times _____ = _____$

$_____ \times _____ = _____$

$_____ \times _____ = _____$

$_____ \times _____ = _____$

$_____ \times _____ = _____$

$_____ \times _____ = _____$

$_____ \div _____ = _____$

$_____ \div _____ = _____$

$_____ \div _____ = _____$

$_____ \div _____ = _____$

$_____ \div _____ = _____$

$_____ \div _____ = _____$

### Section B

Answer the following:

a)  $36 \div 6 =$

b)  $7 \times 2 =$

c)  $9 \div 9 =$

d)  $6 \times 12 =$

e)  $72 \div 8 =$

f)  $8 \times 7 =$

g)  $9 \times 12 =$

h)  $110 \div 11 =$

i)  $48 \times 0 =$

j)  $67 \times 1 =$

### Section C

Fill in the blanks:

a)  $24 \times 10 =$

b)  $240 \div 10 =$

c)  $248 \times$    $= 2480$

d)  $248 \times 100 =$

e)   $\times 100 = 9600$

f)  $73 \times$    $= 73000$

g)  $1.18 \times 100 =$

h)  $126.4 \div 100 =$

i)  $7.83 \times$    $= 78.3$

j)   $\div 1000 = 0.131$

### Section D

Given that  $37 \times 43 = 1591$ , work out:

a)  $3.7 \times 43 =$

d)  $1591 \div 430 =$

b)  $37 \times 430 =$

e)  $1591 \div 4.3 =$

c)  $1591 \div 370 =$

f)  $3.7 \times 4.3 =$

# N3 Multiplication, Division and their Applications

## End of Booklet Follow Up Questions

### Section E

Complete the following tables:

| Millimetres | Centimetres | Centilitres | Litres | Grams | Kilograms |
|-------------|-------------|-------------|--------|-------|-----------|
| 10          |             | 100         |        | 2000  |           |
| 52          |             | 350         |        | 4500  |           |
|             | 14          |             | 9      |       | 19        |

| Centimetres | Metres | Millilitres | Litres | Grams | Kilograms |
|-------------|--------|-------------|--------|-------|-----------|
| 200         |        | 2000        |        |       | 0.5       |
| 980         |        | 3200        |        |       | 12.4      |
|             | 45     |             | 43     | 56.4  |           |

### Section F

a)  $65 \times 8 =$

b)  $9 \times 73 =$

c)  $89 \times 6 =$

d)  $53 \times 47 =$

e)  $19 \times 36 =$

f)  $32 \times 66 =$

g)  $281 \times 79 =$

h)  $14 \times 562 =$

i)  $781 \times 59 =$

A large grid for calculations with a vertical blue line on the left side.



# N3 Multiplication, Division and their Applications

## End of Booklet Follow Up Questions

### Section G

a)  $9.5 \times 8 =$

b)  $6 \times 7.3 =$

c)  $8.9 \times 5 =$

d)  $4.3 \times 57 =$

e)  $18 \times 3.6 =$

f)  $3.2 \times 96 =$

g)  $2.8 \times 7.9 =$

h)  $1.4 \times 5.2 =$

i)  $7.1 \times 5.9 =$

### Section H

a)  $144 \div 3 =$

b)  $164 \div 4 =$

c)  $195 \div 5 =$

d)  $190 \div 8 =$

e)  $190 \div 6 =$

f)  $164 \div 5 =$

g)  $52.8 \div 3 =$

h)  $52.4 \div 4 =$



i)  $52.4 \div 8 =$



# N3 Multiplication, Division and their Applications



## End of Booklet Follow Up Questions



### Section I

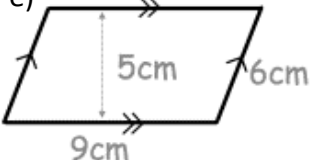

Calculate the areas of the following shapes:

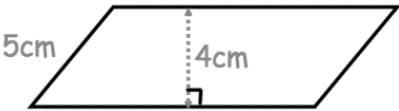

a)  

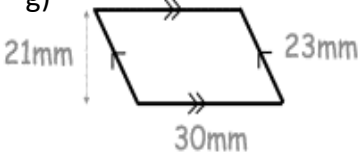

b)  

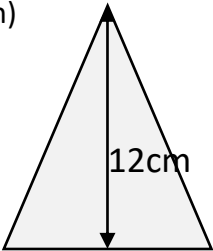

c)  

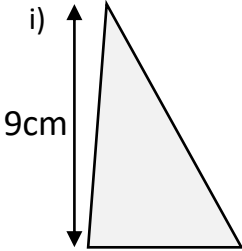

d)  

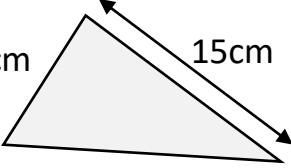

e)  

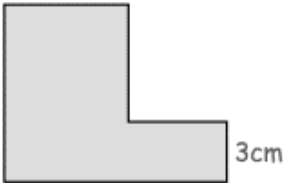

f)  

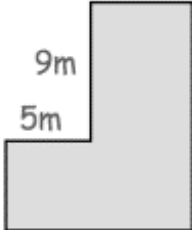

g)  

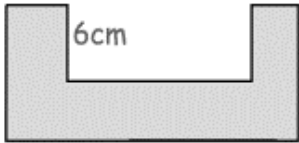

h)  

i)  

j)  

k)  

l)  

m)  

# N3 Multiplication, Division and their Applications

## End of Booklet Follow Up Questions

### Section J

Given the areas of the shapes below, find the missing side lengths:

a) Area =  $42\text{cm}^2$

b) Area =  $18\text{cm}^2$

c) Area =  $36\text{cm}^2$

d) Area =  $64\text{cm}^2$

e) Area =  $45\text{cm}^2$

f) Area =  $48\text{cm}^2$

g) Area =  $90\text{mm}^2$

h) Area =  $120\text{cm}^2$

i) Area =  $65\text{cm}^2$

j) Area =  $45\text{cm}^2$

k) Area =  $78\text{cm}^2$

l) Area =  $111\text{cm}^2$

m) Area =  $136\text{cm}^2$

# N3 Multiplication, Division and their Applications

## End of Booklet Follow Up Questions

### Section K

a) Calculate the mean of 4, 6, 7, 8, 15

b) Calculate the mean of 4, 6, 7, 8, 9

c) Eight numbers have a mean of 10. Seven of the numbers are 1, 3, 8, 14, 18 and 20. What is the eighth number?

d) The mean of 6 numbers is 13. Another number is added and the mean is now 12. What number was added?

e) The mean of 8 numbers is 4. The mean of a different 3 numbers is 5. What is the mean for all of the numbers?

### Section L

Answer the following:

a)  $4^2$

b)  $5^2$

c)  $10^2$

d)  $2^3$

e)  $6^3$

f)  $10^3$

g)  $\sqrt{225}$

h)  $\sqrt{64}$

i)  $\sqrt{81}$

j)  $\sqrt[3]{125}$

k)  $\sqrt[3]{216}$

### Section M

a)  $6 + 3 - 2 =$

b)  $6 + 2 \times 3 =$

c)  $6 \times 3 - 2 =$

d)  $6 - 3 \div 2 =$

e)  $(8 + 4) \div 2 =$

f)  $8 \div (4 \div 2) =$

g)  $(8 + 4) \times (2 + 6) =$

h)  $4^3 - 3 + 2 =$

i)  $5 + 4 \times 3 + 2^2 =$

j)  $4^2 + 3^2 - 2^2 =$

k)  $2 \times (3 + 10)^2 =$

l)  $(2 + 5^2) \times 10 =$

# N3 Multiplication, Division and their Applications

## End of Booklet Follow Up Questions

### Section N

- a) List the first six multiples of 6.
- b) List the first six multiples of 9.
- c) List the first six multiples of 14.
- d) List all the factors of 24.
- e) List all the factors of 56.
- f) List all the factors of 90.
- g) Work out the highest common factor of 15 and 48.
- h) Work out the highest common factor of 35 and 15.
- i) Work out the highest common factor of 52 and 64.
- j) Work out the lowest common multiple of 15 and 8.
- k) Work out the lowest common multiple of 12 and 15.

Handwritten answer boxes for Section N questions, represented by red dashed rectangles.

### Section O

Circle the prime numbers in the lists below.

a)

**3    7    8    11    14    18    23    26    31    32    46    50    52    53    57**

b)

**0    1    5    9    12    16    21    24    29    30    44    48    50    51    59**

c)

**4    7    15    19    25    33    37    47    52    55    61    67    71    73    76**

# N3 Multiplication, Division and their Applications

## End of Booklet Follow Up Questions

Section P

Calculate:

a)  $70 \times 0.1 =$

b)  $80 \times 0.1 =$

c)  $120 \times 0.1 =$

d)  $96 \times 0.1 =$

e)  $19 \times 0.1 =$

f)  $64 \times 0.1 =$

g)  $500 \times 0.01 =$

h)  $900 \times 0.01 =$

i)  $430 \times 0.01 =$

j)  $567 \times 0.01 =$

k)  $26 \div 0.5 =$

l)  $78 \div 0.5 =$

m)  $65 \div 0.1 =$

n)  $39 \div 0.1 =$

o)  $72 \div 0.2 =$

p)  $106 \div 0.2 =$

# N4 Negative Numbers

## Knowledge Organiser

| Key Word               | Definition   |
|------------------------|--|
| <b>Positive Number</b> | All numbers which appear to the right of the 0 on a number line.   |
| <b>Negative Number</b> | All numbers which appear to the left of the 0 on a number line.  |
| <b>Celsius</b>         | Denoting a scale of temperature on which water freezes at $0^{\circ}$ and boils at $100^{\circ}$ under standard conditions.            |
| <b>Zero pair</b>       | A set of two numbers that when added together equal zero. The two numbers must include one positive and one negative number.           |
| <b>Addition</b>        | The process of calculating the total of two or more numbers.   |
| <b>Subtraction</b>     | A mathematical operation in which the difference between two numbers or quantities is calculated. Usually indicated by the symbol '-'. |
| <b>Multiplication</b>  | An arithmetical operation, defined initially in terms of repeated addition.  |
| <b>Division</b>        | The arithmetical process of dividing one number into another number.   |
| <b>Operation</b>       | Operations in mathematics refer to the basic mathematical actions or processes used to perform calculations and solve problems.        |
| <b>Powers</b>          | A way of showing a number is multiplied by itself a certain amount of times.   |

# N4 Negative Numbers

## Knowledge Organiser Quiz

| Question  | Answer |
|---|--------|
| <b>Positive</b> numbers are numbers which appear to the _____ of the _____ on a number line.  |        |
| <b>Negative</b> numbers are numbers which appear to the _____ of the _____ on a number line.  |        |
| <b>Celsius</b> denotes a scale of _____ on which water freezes at _____° and boils at _____° under standard conditions.                                   |        |
| A <b>zero pair</b> is a set of two numbers that when _____ together equal _____. The two numbers must include one _____ and one _____ number.             |        |
| <b>Addition</b> is the process of _____ the _____ of two or more numbers.   |        |
| <b>Subtraction</b> is a mathematical operation in which the _____ between two numbers or quantities is calculated. Usually indicated by the symbol _____. |        |
| <b>Multiplication</b> is an _____ operation, defined initially in terms of _____ addition.  |        |
| <b>Division</b> is the arithmetical process of _____ one number _____ another number.   |        |
| <b>Operations</b> in mathematics refer to the basic mathematical actions or _____ used to perform _____ and solve problems.                               |        |
| <b>Powers</b> are a way of showing a number is _____ by itself a certain amount of times.   |        |



# N4 Negative Numbers

## End of Booklet Review

1. Position the following numbers on the number lines:

a) -3



b) -6



c) -7



d) -9



e) -12



2. Arrange the following temperatures in order, from lowest to highest.

a)  $-7^{\circ}\text{C}$ ,  $13^{\circ}\text{C}$ ,  $10^{\circ}\text{C}$ ,  $-14^{\circ}\text{C}$ ,  $12^{\circ}\text{C}$ ,  $-6^{\circ}\text{C}$ ,  $3^{\circ}\text{C}$

b)  $-12^{\circ}\text{C}$ ,  $14^{\circ}\text{C}$ ,  $10^{\circ}\text{C}$ ,  $-14^{\circ}\text{C}$ ,  $13^{\circ}\text{C}$ ,  $-4^{\circ}\text{C}$ ,  $5^{\circ}\text{C}$

c)  $-7.5^{\circ}\text{C}$ ,  $-7^{\circ}\text{C}$ ,  $-7.25^{\circ}\text{C}$ ,  $-3^{\circ}\text{C}$ ,  $2^{\circ}\text{C}$ ,  $7^{\circ}\text{C}$ ,  $12^{\circ}\text{C}$

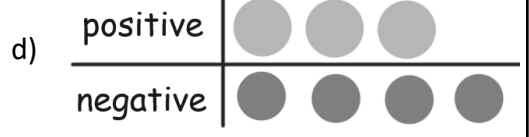
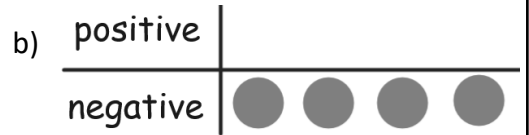
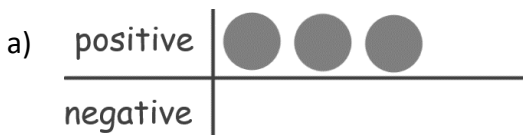
Three empty dashed red boxes for writing the ordered temperatures.

# N4 Negative Numbers

## End of Booklet Review

3.

Write down the number that each set of counters represent:



4.

Calculate:

a)  $-6 + 1 =$

b)  $-3 + 9 =$

c)  $-6 - 3 =$

d)  $6 - -4 =$

e)  $-5 - -9 =$

5.

Calculate:

a)  $2 \times -3 =$

b)  $-5 \times -8 =$

c)  $-11 \times 10 =$

d)  $-9 \times 2 \times -2 =$

6.

Calculate:

a)  $9 \div -3 =$

b)  $-44 \div 11 =$

c)  $-48 \div -8 =$

d)  $-120 \div 2 \times -2 =$

# N4 Negative Numbers

## End of Booklet Review

7.

Calculate:

a)  $2.2 \times -10 =$

b)  $-6.2 \times -3 =$

c)  $-17 \div -10 =$

d)  $52.4 \div -8 =$

e)  $-52.8 \div -3 =$

8.

Calculate:

a)  $-2^2 =$

b)  $-5^3 =$

c) Give both solutions:  $\sqrt{36} =$

d)  $\sqrt[3]{-27} =$

9.

Calculate:

a)  $(-15 \div 3) + (-12 \div 3) =$

b)  $-6 \times 2 - -14 =$

c)  $(-22 \div 2) - 2 \times 4 =$

d)  $5 \times (-2 \times 5)^2 =$

e)  $-4^2 - 5 \times (-2) =$

# N4 Negative Numbers

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## End of Booklet Review

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| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 |
|----|----|----|----|----|----|----|----|----|
| /5 | /3 | /4 | /5 | /4 | /4 | /5 | /4 | /5 |
| A  | B  | C  | D  | E  | F  | G  | H  | I  |

*Complete these sections for the questions you didn't get full marks on* \_\_\_\_\_

# N4 Negative Numbers

## End of Booklet Follow Up Questions

### Section A

Position the following numbers on the number lines:



d) -7 and -4

e) -9 and -6

f) -12 and -18



# N4 Negative Numbers

## End of Booklet Follow Up Questions

### Section B

Arrange the following temperatures in order, from lowest to highest.

a)  $-8^{\circ}\text{C}$ ,  $14^{\circ}\text{C}$ ,  $11^{\circ}\text{C}$ ,  $-13^{\circ}\text{C}$ ,  $13^{\circ}\text{C}$ ,  $-5^{\circ}\text{C}$ ,  $4^{\circ}\text{C}$

b)  $-11^{\circ}\text{C}$ ,  $15^{\circ}\text{C}$ ,  $11^{\circ}\text{C}$ ,  $-13^{\circ}\text{C}$ ,  $14^{\circ}\text{C}$ ,  $-3^{\circ}\text{C}$ ,  $6^{\circ}\text{C}$

c)  $-6.5^{\circ}\text{C}$ ,  $-6^{\circ}\text{C}$ ,  $-6.25^{\circ}\text{C}$ ,  $-2^{\circ}\text{C}$ ,  $3^{\circ}\text{C}$ ,  $8^{\circ}\text{C}$ ,  $13^{\circ}\text{C}$

d)  $-9.5^{\circ}\text{C}$ ,  $-9^{\circ}\text{C}$ ,  $-9.25^{\circ}\text{C}$ ,  $-5^{\circ}\text{C}$ ,  $-2^{\circ}\text{C}$ ,  $3^{\circ}\text{C}$ ,  $8^{\circ}\text{C}$

e)  $-2.5^{\circ}\text{C}$ ,  $-2^{\circ}\text{C}$ ,  $-2.25^{\circ}\text{C}$ ,  $2^{\circ}\text{C}$ ,  $5^{\circ}\text{C}$ ,  $10^{\circ}\text{C}$ ,  $15^{\circ}\text{C}$

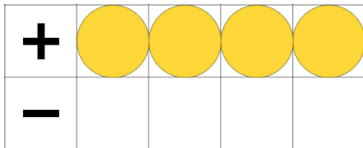
f)  $-4.25^{\circ}\text{C}$ ,  $-3.75^{\circ}\text{C}$ ,  $-4.75^{\circ}\text{C}$ ,  $-3^{\circ}\text{C}$ ,  $-4^{\circ}\text{C}$ ,  $4.6^{\circ}\text{C}$ ,  $-4.6^{\circ}\text{C}$

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### Section C

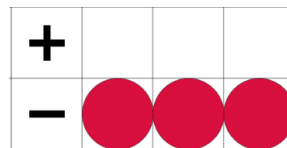
Write down the number that each set of counters represent:

a)



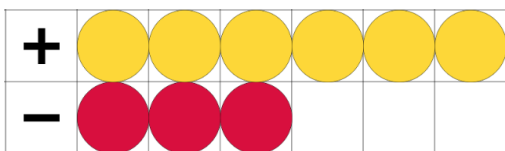
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b)



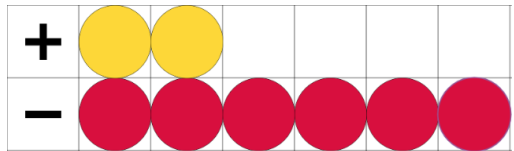
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c)



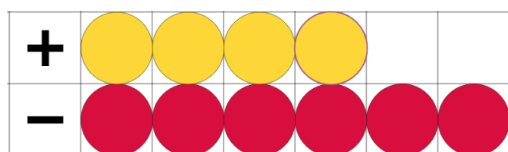
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d)



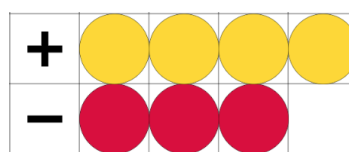
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e)



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f)



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# N4 Negative Numbers

## End of Booklet Follow Up Questions

### Section D

Calculate:

a)  $-5 + 1 =$

b)  $-1 + 1 =$

c)  $-4 + 2 =$

d)  $-9 + 8 =$

e)  $-4 + 7 =$

f)  $-6 + 10 =$

g)  $-7 - 5 =$

h)  $-3 - 8 =$

i)  $5 - -4 =$

j)  $9 - -3 =$

k)  $-6 - -5 =$

l)  $-11 - -8 =$

### Section E

Calculate:

a)  $4 \times -3 =$

b)  $7 \times -2 =$

c)  $-6 \times -4 =$

d)  $-9 \times -7 =$

e)  $-12 \times 3 =$

f)  $-9 \times 5 =$

g)  $-3 \times 4 \times -5 =$

h)  $5 \times -6 \times -2 =$

### Section F

Calculate:

a)  $4 \div -2 =$

b)  $15 \div -3 =$

c)  $66 \div -6 =$

d)  $81 \div -9 =$

e)  $-42 \div -7 =$

f)  $-28 \div -4 =$

g)  $-36 \div 6 \div -2 =$

h)  $-100 \div -4 \div 5 =$

# N4 Negative Numbers

## End of Booklet Follow Up Questions

### Section G

Calculate:

a)  $3.6 \times -10 =$

b)  $9.35 \times -10 =$

c)  $-9.5 \times -7 =$

d)  $-6.4 \times -8 =$

e)  $-19 \div -10 =$

f)  $-25.4 \div -10 =$

g)  $12.8 \div -5 =$

h)  $29.68 \div -8 =$

i)  $-22.9 \div -5 =$

j)  $-43.29 \div -9 =$

### Section H

Calculate:

a)  $-3^2 =$

b)  $-4^3 =$

c) Give both solutions:  $\sqrt{49} =$

d)  $\sqrt[3]{-64} =$



# N4 Negative Numbers

## End of Booklet Follow Up Questions

Section I

Calculate:

a)  $(-20 \div 4) + (-18 \div 3) =$

b)  $-7 \times 3 - -12 =$

c)  $(-33 \div 3) - 3 \times 5 =$

d)  $3 \times (-3 \times 4)^2 =$

e)  $-5^2 - 6 \times (-3) =$