

Column Addition

Column Subtraction

Column Multiplication

Short and Long Division

|       |   |   |   |   |   |
|-------|---|---|---|---|---|
|       | 4 | 5 | 8 | 6 | 4 |
| +     | 2 | 3 | 4 | 9 | 7 |
| <hr/> |   |   |   |   |   |
|       | 6 | 9 | 3 | 6 | 1 |
|       |   | 1 | 1 | 1 |   |

|       |   |   |                            |                            |   |
|-------|---|---|----------------------------|----------------------------|---|
|       | 3 | 5 | <del>7</del> <sup>13</sup> | <del>4</del> <sup>12</sup> |   |
| -     |   | 3 | 4                          | 7                          | 6 |
| <hr/> |   |   |                            |                            |   |
|       | 3 | 2 | 2                          | 6                          | 6 |

|   |   |   |              |              |              |   |  |
|---|---|---|--------------|--------------|--------------|---|--|
|   |   |   |              |              |              |   |  |
|   |   |   | 4            | 2            | 6            | 7 |  |
|   | × |   |              |              | 3            | 4 |  |
|   |   | 1 | 7            | 0            | 6            | 8 |  |
|   |   |   | <sup>1</sup> | <sup>2</sup> | <sup>2</sup> |   |  |
| + | 1 | 2 | 8            | 0            | 1            | 0 |  |
|   |   |   | <sup>2</sup> | <sup>2</sup> |              |   |  |
|   | 1 | 4 | 5            | 0            | 7            | 8 |  |
|   |   | 1 |              |              |              |   |  |

|       |   |   |   |   |   |   |
|-------|---|---|---|---|---|---|
|       |   |   | 4 | 4 | 0 | 5 |
| 12    | 5 | 2 | 8 | 6 | 0 |   |
| <hr/> |   |   |   |   |   |   |

|    |   |   |   |   |   |   |
|----|---|---|---|---|---|---|
|    |   | 1 | 2 | 0 | r | 3 |
| 14 | 1 | 6 | 8 | 3 |   |   |
|    | 1 | 4 | 0 | 0 | - |   |
|    |   | 2 | 8 | 3 |   |   |
|    |   | 2 | 8 | 0 | - |   |
|    |   |   |   | 3 |   |   |

|          |                       |   |   |
|----------|-----------------------|---|---|
| <b>B</b> | <b>Brackets</b>       | Complete anything in brackets first   | $10 \times (4 + 2) =$<br>$10 \times 6 = 16$ |
| <b>O</b> | <b>Orders</b>         | Squares, cubes, square roots  | $5 + 3^2 =$<br>$5 + 9 = 14$                 |
| <b>D</b> | <b>Division</b>       | Next do division and multiplication (if there are both, complete left to right) | $10 + 6 \div 2 =$<br>$10 + 3 = 13$          |
| <b>M</b> | <b>Multiplication</b> |   | $10 - 4 \times 2 =$<br>$10 - 8 = 2$         |
| <b>A</b> | <b>Addition</b>       | Then do addition and subtraction (if there are both, complete left to right)    | $10 \times 4 + 7 =$<br>$40 + 7 = 47$        |
| <b>S</b> | <b>Subtraction</b>    |   | $10 \div 2 - 3 =$<br>$5 - 3 = 2$            |

| Term                    | Definition  | Example   |    |     |     |    |    |     |    |    |    |    |    |    |    |    |   |    |    |    |
|-------------------------|---|---|----|-----|-----|----|----|-----|----|----|----|----|----|----|----|----|---|----|----|----|
| <b>factor</b>           | a number that divides exactly into another number – (helpful to find them in pairs) | factors of 12 are <b>1 and 12 2 and 6 3 and 4</b>   |    |     |     |    |    |     |    |    |    |    |    |    |    |    |   |    |    |    |
| <b>common factor</b>    | factors of two numbers that are the same  | <p>Factors of 48</p> <table border="1" data-bbox="1145 379 1634 425"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>6</td><td>8</td><td>12</td><td>16</td><td>24</td><td>48</td> </tr> </table> <p>Factors of 30</p> <table border="1" data-bbox="1145 482 1634 528"> <tr> <td>1</td><td>2</td><td>3</td><td>5</td><td>6</td><td>10</td><td>15</td><td>30</td> </tr> </table> <p>Common factors are 1, 2, 3, 6</p> | 1  | 2   | 3   | 4  | 6  | 8   | 12 | 16 | 24 | 48 | 1  | 2  | 3  | 5  | 6 | 10 | 15 | 30 |
| 1                       | 2   | 3   | 4  | 6   | 8   | 12 | 16 | 24  | 48 |    |    |    |    |    |    |    |   |    |    |    |
| 1                       | 2   | 3   | 5  | 6   | 10  | 15 | 30 |     |    |    |    |    |    |    |    |    |   |    |    |    |
| <b>prime number</b>     | a number with only 2 factors: 1 and itself  | 2, 3, 5, 7, 11, 13, 17, 19...   |    |     |     |    |    |     |    |    |    |    |    |    |    |    |   |    |    |    |
| <b>composite number</b> | a number with more than two factors   | 20 is composite factors are 1, 20 2, 10 4, 5  |    |     |     |    |    |     |    |    |    |    |    |    |    |    |   |    |    |    |
| <b>prime factor</b>     | a factor that is prime number   | Factors of 10 are 1, 10 <b>2,5</b> these are prime factors  |    |     |     |    |    |     |    |    |    |    |    |    |    |    |   |    |    |    |
| <b>multiple</b>         | the result of multiplying a number by an integer                                    | Multiples of 7 are 7, 14, 21, 28 ...  |    |     |     |    |    |     |    |    |    |    |    |    |    |    |   |    |    |    |
| <b>common multiple</b>  | multiples of two numbers that are the same  | <p>Multiples of 3</p> <table border="1" data-bbox="1131 972 1622 1018"> <tr> <td>3</td><td>...</td><td>18</td><td>21</td><td>24</td><td>...</td><td>39</td><td>42</td> </tr> </table> <p>Multiples of 7</p> <table border="1" data-bbox="1131 1075 1622 1120"> <tr> <td>7</td><td>14</td><td>21</td><td>28</td><td>35</td><td>42</td> </tr> </table> <p>Common multiples of 3 and 7 are 21 42</p>                     | 3  | ... | 18  | 21 | 24 | ... | 39 | 42 | 7  | 14 | 21 | 28 | 35 | 42 |   |    |    |    |
| 3                       | ...   | 18  | 21 | 24  | ... | 39 | 42 |     |    |    |    |    |    |    |    |    |   |    |    |    |
| 7                       | 14  | 21  | 28 | 35  | 42  |    |    |     |    |    |    |    |    |    |    |    |   |    |    |    |
| <b>square numbers</b>   | the result when a number has been multiplied by itself                              | 25 ( $5^2 = 5 \times 5$ )                      49 ( $7^2 = 7 \times 7$ )  |    |     |     |    |    |     |    |    |    |    |    |    |    |    |   |    |    |    |
| <b>cube numbers</b>     | the result when a number has been multiplied by itself 3 times                      | 8 ( $2^3 = 2 \times 2 \times 2$ )                      27 ( $3^3 = 3 \times 3 \times 3$ )   |    |     |     |    |    |     |    |    |    |    |    |    |    |    |   |    |    |    |