

<p><b>*Trial and improvement.</b> Determine the length of the side of the square (to 1dp), given that its area is <math>300\text{m}^2</math>.</p> <div style="text-align: center; border: 1px solid black; width: 80px; height: 80px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <math>300\text{m}^2</math> </div>	<p><b>Substitution.</b> If <math>v = u + at</math> and <math display="block">s = ut + \frac{1}{2}at^2</math>Determine 'v' and 's' when...</p> <p>(i) <math>u = 2, a = 1</math> and <math>t = 3</math> (ii) <math>u = -3, a = 2</math> and <math>t = -4</math> (iii) <math>u = -1, a = 3</math> and <math>t = 5</math></p>	<p><b>Expand and/or simplify.</b></p> <p>(i) <math>\frac{1}{5}(20x - 15)</math> (ii) <math>-(b + c)</math> (iii) <math>3(2y + 5z) - 4(2y - x)</math> (iv) <math>(x - 7)(x - 6)</math> (v) <math>(2p + 3)(p + 5)</math> (vi) <math>(3x - 2)^2</math></p>	<p><b>Factorise.</b></p> <p>(i) <math>2 + 10x</math> (ii) <math>y^2 + 5y</math> (iii) <math>pqr + p^2 + pr</math> (iv) <math>4x - 10x^2</math> (v) <math>2x^2 + 6xy</math> (vi) <math>8abc + 6ab^2c + 4abc^2</math></p>																
<p><b>Straight line graphs.</b> An equation of a straight line is given by <math>y = 3x - 1</math> Determine its ...</p> <p>(i) gradient (ii) y-intercept (iii) x-intercept (iv) The coordinate of the point where the line intercepts the line <math>y = 7</math>.</p>	<p><b>Index Laws.</b> Simplify</p> <p>(i) <math>m^4 \times m^5</math> (ii) <math>p^6 \div p^2</math> (iii) <math>\frac{q^2 \times q^6}{q^3}</math> (iv) <math>\frac{4(k+8)^2}{(k+8)}</math> (v) <math>(2xy^3)^5</math></p>	<p><b>N<sup>th</sup> terms.</b> The first five terms of a sequence are ... -4, -1, 2, 5 and 8.</p> <p>(i) Find the n<sup>th</sup> term and. (ii) 1000<sup>th</sup> term of this sequence.</p> <p>The first five terms of a sequence are ... 20, 10, 0, -10 and -20.</p> <p>(iii) Find the n<sup>th</sup> term and. (iv) 20<sup>th</sup> term of this sequence.</p>	<p><b>Construct an equation.</b> A bicycle has 2 wheels. A tricycle has 3 wheels. In a shop there are 'p' bicycles and 'q' tricycles. Write down an expression, in terms of 'p' and 'q', for the total number of wheels on the bicycles and tricycles in the shop.</p>																
<p><b>Plot graph of a quad equation.</b> Copy and complete the table of values for <math>y = 6 - x^2</math></p> <table border="1" style="margin: 0 auto;"> <tbody> <tr> <td style="background-color: #f2f2f2;">x</td> <td>-3</td> <td>-2</td> <td>-1</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td style="background-color: #f2f2f2;">y</td> <td>-3</td> <td></td> <td></td> <td>6</td> <td></td> <td>2</td> <td></td> </tr> </tbody> </table> <p>Draw the graph of <math>y = 6 - x^2</math> from <math>x = -3</math> to <math>x = 3</math> Estimate where the graph crosses the x - axis.</p>	x	-3	-2	-1	0	1	2	3	y	-3			6		2		<p><b>Inequalities.</b> <math>-5 &lt; 2m \leq 9</math> If 'm' is an integer, write all its possible values.</p> <p>Solve the inequalities</p> <p>(i) <math>5x + 3 &gt; 19</math> (ii) <math>3x \leq 7 - x</math></p>	<p><b>Solve these linear equations.</b></p> <p>(i) <math>\frac{x}{3} = 5</math> (ii) <math>3y + 2 = 17</math> (iii) <math>30 = 5(2x + 3)</math> (iv) <math>5(x - 2) = 20</math> (v) <math>7p + 2 = 5p + 8</math> (vi) <math>7r + 2 = 5(r - 4)</math></p>	<p><b>Rearranging algebraic expressions.</b></p> <p>Make 'x' the subject of the formula <math>y + 2x = 1 - 3x</math></p> <p>Make 'c' the subject of the formula <math>a + bc = 5 - 3c</math></p>
x	-3	-2	-1	0	1	2	3												
y	-3			6		2													

\*Calculator allowed

courtesy of Dave Russell