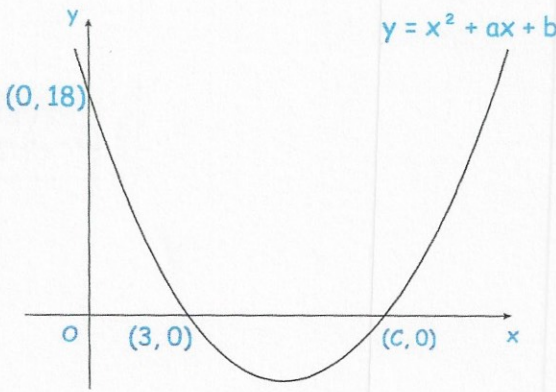
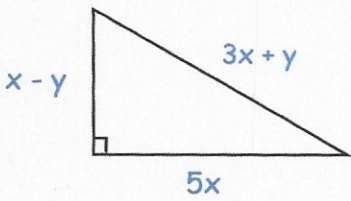


<p>3rd June</p> <p>Shown is the graph of $y = x^2 + ax + b$</p> <p>The graph crosses the y-axis at (0, 18) and the x-axis at (3, 0) and (c, 0), where $c > 3$</p> <p>Find the values of a and b</p> <p>$b = 18$ (y intercept)</p> <p>$a = -9$</p> <p>Since</p> $(x - 3)(x - 6) = x^2 - 9x + 18$ <p style="text-align: center;">$(c = 6)$</p>	<p style="text-align: right;">Corbettmαths</p> 
<p>Given</p> $f(x) = \frac{2x + 1}{5}$ <p>find</p> $f^{-1}(4) = 9\frac{1}{2}$	$y = \frac{2x + 1}{5}$ $5y = 2x + 1$ $x = \frac{5y - 1}{2} \quad \frac{5 \times 4 - 1}{2} = 9\frac{1}{2}$
<p>An object has a mass of 420kg, correct to two significant figures.</p> <p>The density of the material it is made from is 5.4g/cm³, correct to one decimal place.</p> <p>Work out the smallest possible volume of the object. Give your answer to three significant figures.</p>	$V_{\min} = \frac{M_{\min}}{D_{\max}} = \frac{415,000}{5.45}$ $= 76146.78 \dots$ $\approx \underline{\underline{76100 \text{ cm}^3}}$
	<p>Prove $x : y = 8 : 17$</p> $(x - y)^2 + (5x)^2 = (3x + y)^2$ $26x^2 + y^2 - 2xy = 9x^2 + 6xy + y^2$ $17x^2 = 8xy$ $17x = 8y$ <p style="text-align: center;">$\therefore x : y = 8 : 17$</p>