


18th April		 CorbettmOths
<p>Are the lines $4x - y - 5 = 0$ and $x + 4y + 1 = 0$ perpendicular?</p> $4x - y - 5 = 0$ $4x - 5 = y$ $y = 4x - 5$	$x + 4y + 1 = 0$ $4y = -x - 1$ $y = -\frac{1}{4}x - \frac{1}{4}$ <p style="text-align: right;"><u>yes</u></p>	
<p>Helen says that the cosine of an angle is -1.</p> <p>Write down three possible angles</p> $180^\circ, 540^\circ, 900^\circ$		
<p>Solve the simultaneous equations</p> $x^2 + y^2 = 5$ $2x + y - 5 = 0$ $y = 5 - 2x$	$x^2 + (5 - 2x)^2 = 5$ $x^2 + (5 - 2x)(5 - 2x) = 5$ $x^2 + 25 - 20x + 4x^2 = 5$ $5x^2 - 20x + 20 = 0$ $x^2 - 4x + 4 = 0$	$(x - 2)(x - 2) = 0$ $x = 2$ $y = 1$
<p>For all values of x</p> $f(x) = \frac{2x + 1}{4}$ $y = \frac{2x + 1}{4}$ $4y = 2x + 1$ $4y - 1 = 2x$	<p>Find</p> $x = \frac{4y - 1}{2}$ $f^{-1}(x) = \frac{4x - 1}{2}$	
<p>The graph with equation $y = x^3$ is translated by the vector $\begin{pmatrix} -1 \\ 0 \end{pmatrix}$ left</p> $f(x + 1)$ <p>Write down the equation of the translated graph</p>	$y = (x + 1)^3$ $y = (x + 1)(x + 1)(x + 1)$ $y = x^3 + 3x^2 + 3x + 1$	