


5th December		 Corbettmaths
$4 \begin{pmatrix} 6-c \\ d \end{pmatrix} = c \begin{pmatrix} -2 \\ 9 \end{pmatrix}$ <p>Work out the values of c and d</p>	$4(6-c) = -2c$ $24 - 4c = -2c$ $24 = 2c$ $\underline{c = 12}$	$4d = 9c$ $d = \frac{9}{4}c$ $\underline{d = 27}$
<p>Use the factor theorem to show that $(x - 2)$ is a factor of</p> $x^3 + 6x^2 - 9x - 14 = f(x)$	$f(2) = 8 + 24 - 18 - 14 = 0$ <p>\rightarrow <u>$x - 2$ factor</u></p>	
<p>Hence, factorise fully</p> $x^3 + 6x^2 - 9x - 14$	$= (x-2)(x^2 + 8x + 7)$ $= \underline{(x-2)(x+1)(x+7)}$	
<p>A curve has equation</p> $y = 2x^3 - 7x^2 + 12$ <p>Work out the equation of the tangent to the curve at the point where $x = 2$</p>	$\Rightarrow \frac{dy}{dx} = 6x^2 - 14x$ $x = 2 \Rightarrow \frac{dy}{dx} = -4, y = 0$ <p>Tgt is $y = -4(x-2)$</p> $\Rightarrow \underline{y = -4x + 8}$	