


28th November	
For what values of x is $y = x^2$ a decreasing function?	 Corbettmaths $\frac{dy}{dx} = 2x$ Decreasing $\Rightarrow 2x < 0$ $\Rightarrow \underline{x < 0}$
Use the factor theorem to show that $(x - 1)$ is a factor of $x^3 - 6x^2 - x + 6 = f(x)$	$f(1) = 1 - 6 - 1 + 6 = 0$ $\Rightarrow \underline{x - 1 \text{ factor}}$
Hence, factorise fully $x^3 - 6x^2 - x + 6$	$= (x - 1)(x^2 - 5x - 6)$ $= \underline{(x - 1)(x + 1)(x - 6)}$
Find the transformation matrix that is equivalent to - a rotation, 90° anticlockwise about the origin followed by - an enlargement, scale factor 3, with the origin as the centre of enlargement.	$\begin{pmatrix} 3 & 0 \\ 0 & 3 \end{pmatrix} \begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix} = \underline{\begin{pmatrix} 0 & -3 \\ 3 & 0 \end{pmatrix}}$