


13th September	
$\mathbf{A} = \begin{pmatrix} 6 & -2 \\ 1 & -1 \end{pmatrix} \quad \mathbf{B} = \begin{pmatrix} 4 \\ 3 \end{pmatrix}$ <p>Work out the matrix AB</p>	 Corbettmaths $\begin{pmatrix} 6 & -2 \\ 1 & -1 \end{pmatrix} \begin{pmatrix} 4 \\ 3 \end{pmatrix} = \underline{\underline{\begin{pmatrix} 18 \\ 1 \end{pmatrix}}}$
<p>Work out the matrix A²</p>	$\begin{pmatrix} 6 & -2 \\ 1 & -1 \end{pmatrix} \begin{pmatrix} 6 & -2 \\ 1 & -1 \end{pmatrix} = \underline{\underline{\begin{pmatrix} 34 & -10 \\ 5 & -1 \end{pmatrix}}}$
<p>Express $x^2 + 14x + 52$ in the form $(x + a)^2 + b$</p>	$\begin{aligned} (x+7)^2 - 49 + 52 \\ = \underline{\underline{(x+7)^2 + 3}} \end{aligned}$
<p>Deduce the maximum value of</p> $\frac{1}{x^2 + 14x + 52}$	$\begin{aligned} (x+7)^2 + 3 &\geq 3 \\ \frac{1}{(x+7)^2 + 3} &\leq \underline{\underline{\frac{1}{3}}} \end{aligned}$
<p>$f(x) = \frac{3}{x+8}$ for all positive values of x</p> <p>Work out $f(x+2) + f(x+1)$</p> <p>Give your answer as a single fraction in its simplest form.</p>	$\begin{aligned} \frac{3}{x+10} + \frac{3}{x+9} \\ = \frac{3(x+9) + 3(x+10)}{(x+9)(x+10)} \\ = \underline{\underline{\frac{6x+57}{(x+9)(x+10)}}} \end{aligned}$