26th June	Corbettmaths
Find where the matrix $\begin{pmatrix} 0 & 5 \\ 2 & -3 \end{pmatrix}$ maps the point $(2, -1)$	$\begin{pmatrix} 0 & 5 \\ 2 & -3 \end{pmatrix}\begin{pmatrix} 2 \\ -1 \end{pmatrix} = \begin{pmatrix} -5 \\ 7 \end{pmatrix}$ $(2,-1) \rightarrow (-5, 7)$
The nth term of a sequence is $\frac{3n^2+8}{4n^2-1}$ find the limiting value of the sequence as $n \rightarrow \infty$	$= \frac{3 + \frac{8}{n^2}}{4 - \frac{1}{n^2}} \rightarrow \frac{3}{4}$
Factorise $8x^2 - 14xy - 15y^2$	$= (2x - 5y)(4x + 3y)$
Use Pascal's Triangle to work out the coefficient of x^3 in the expansion of $(1 + 2x)^4$ 1 1 1 1 2 1 1 3 3 1 1 4 6 (4) 1	Term in $x^3 = 4 \times (2x)^3$ Coeff $= 4 \times 2^3$ $= 32$
Point A lies on the curve $y = x^3 - x + 2$ The x-coordinate of A is −1 Find the equation of the normal to the curve at A.	$\frac{dy}{dx} = 3x^2 - 1$ $x = -1 \Rightarrow \frac{dy}{dx} = 2, \; y = 2$ $m_{\perp} = -\frac{1}{2}$ Normal: $y - 2 = -\frac{1}{2}(x+1)$ $y = -\frac{1}{2}x + \frac{3}{2}$

