13th October

Corbettmaths

$y = ab^x$ passes through the points

$(3, 5)$ and $(5, 1.25)$

Find the values of a and b.

$1.25 = ab^5$

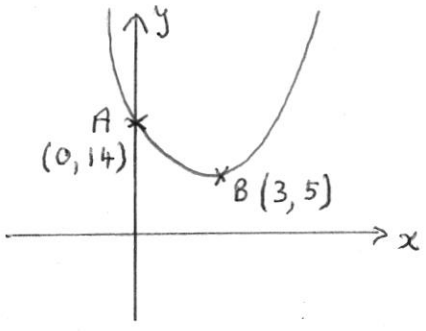
$5 = ab^3$

$0.25 = b^2 \Rightarrow b = 0.5$

$a = 40$

Sketch $y = x^2 - 6x + 14$
and find the distance between A, where the curve meets the y-axis, and B, the minimum point.

$x^2 - 6x + 14 = (x-3)^2 + 5$



$AB = \sqrt{3^2 + 9^2} = \sqrt{90}$

$= 9.49$

$\mathbf{A} = \begin{pmatrix} 6 & -2 \\ -1 & 3 \end{pmatrix}$ $\mathbf{B} = \begin{pmatrix} 3 & 8 \\ 7 & 3 \end{pmatrix}$

$\mathbf{C} = \begin{pmatrix} -3 \\ 2 \end{pmatrix}$

Work out the matrix **BAC**

$\underline{B}\,\underline{A}\,\underline{C} = \begin{pmatrix} 3 & 8 \\ 7 & 3 \end{pmatrix}\begin{pmatrix} 6 & -2 \\ -1 & 3 \end{pmatrix}\begin{pmatrix} -3 \\ 2 \end{pmatrix}$

$= \begin{pmatrix} 10 & 18 \\ 39 & -5 \end{pmatrix}\begin{pmatrix} -3 \\ 2 \end{pmatrix}$

$= \begin{pmatrix} 6 \\ -127 \end{pmatrix}$