Name: _____ 5-a-day Further Maths

1st November

Corbettmaths

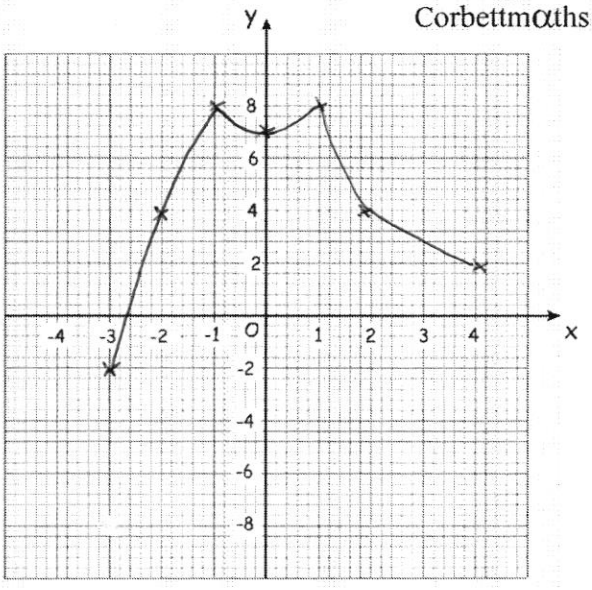
A function f(x) is defined as

$$f(x) = 10 + x - x^2 \quad -3 \le x < -1$$

$$= x^2 + 7 \quad -1 \le x < 1$$

$$= \frac{8}{x} \quad 1 \le x \le 4$$

Draw the graph of $y = f(x)$

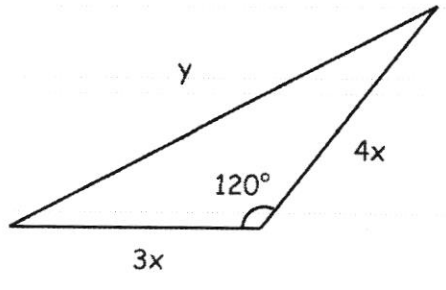


$$\mathbf{C} = \begin{pmatrix} -3 & 2 \\ -1 & 5 \end{pmatrix}$$

$$\mathbf{D} = \begin{pmatrix} -4 & 0 \\ 2 & 3 \end{pmatrix}$$

Work out the matrix **CD**

$$\begin{pmatrix} -3 & 2 \\ -1 & 5 \end{pmatrix}\begin{pmatrix} -4 & 0 \\ 2 & 3 \end{pmatrix} = \begin{pmatrix} 16 & 6 \\ 14 & 15 \end{pmatrix}$$



Work out the ratio $y : x$

$y^2 = (3x)^2 + (4x)^2 - 2(3x)(4x)\cos 120°$

$y^2 = 9x^2 + 16x^2 + 12x^2$

$y^2 = 37x^2$

$y = \sqrt{37}x$

$y : x = \sqrt{37} : 1$