12th February

Corbettmaths

A circle has equation

$(x-9)^2+(y+2)^2=25$

Centre: (9, -2)

Write down the coordinates of 5 points on the circle.

r = 5

3, 4, 5

examples:

(4, -2) (14, -2)

(9, 3) (9, -7)

(12, 2) (13, 1) etc.

$y=\frac{3}{x^2}$

$y = 3x^{-2}$

Work out $\frac{dy}{dx}$

$\frac{dy}{dx} = -6x^{-3}$

$\frac{dy}{dx} = -\frac{6}{x^3}$

ABC is a straight line with A:B = 5:3

A(6, 1)

B(20, -3.5)

C

$\vec{AB} = \begin{pmatrix} 14 \\ -4.5 \end{pmatrix}$

Work out the coordinates of C

$\frac{1}{5}\vec{AB} = \begin{pmatrix} 2.8 \\ -0.9 \end{pmatrix}$ $\frac{3}{5}\vec{AB} = \begin{pmatrix} 8.4 \\ -2.7 \end{pmatrix}$

$\vec{BC} = \begin{pmatrix} 8.4 \\ -2.7 \end{pmatrix}$

C (28.4, -6.2)

(28.4, -6.2)

$\mathbf{A} = \begin{pmatrix} 3 & -2 \\ 5 & 1 \end{pmatrix}$ $\mathbf{B} = \begin{pmatrix} p \\ -3 \end{pmatrix}$

$\mathbf{C} = \begin{pmatrix} 27 \\ q \end{pmatrix}$

$3p + 6 = 27$

$3p = 21$

$p = 7$

$35 - 3 = q$

$q = 32$

AB = C

Work out p and q

$p = 7$

$q = 32$

Work out **AC**

$\begin{pmatrix} 17 \\ 167 \end{pmatrix}$