

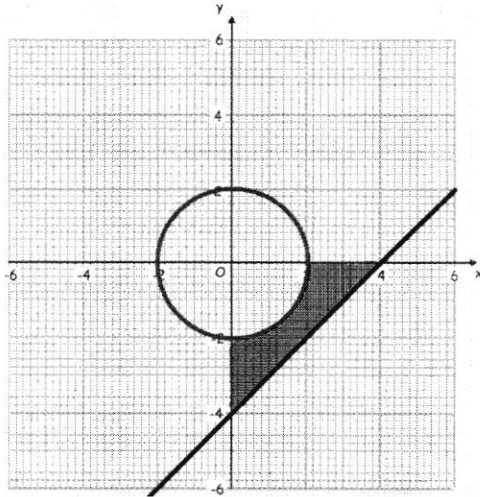
29th October



Corbettmaths

The circle below has equation  $x^2 + y^2 = 4$   $r = 2$

The line has equation  $y = x - 4$



Find the area of the shaded region.

$$\frac{1}{2} \times 4 \times 4 - \frac{1}{4} \times \pi \times 2^2$$

$$= \underline{8 - \pi}$$

Describe fully the **single** transformation represented by  $\begin{pmatrix} 4 & 0 \\ 0 & 4 \end{pmatrix}$

Enlargement  
centre  $(0, 0)$   
scale factor 4

Work out the equation of the line of symmetry of the graph

$$y = 2x^2 + 6x + 5$$

$$y = 2[x^2 + 3x] + 5$$

$$= 2\left[\left(x + \frac{3}{2}\right)^2 - \frac{9}{4}\right] + 5$$

$$= 2\left(x + \frac{3}{2}\right)^2 + \frac{1}{2}$$

$$\underline{x = -\frac{3}{2}}$$

The coefficient of  $x^2$  in the expansion of  $(2 + ax)^4$  is 384.

Find the possible values of a.

Term in  $x^2$  is

$$6 \times (2)^2 \times (ax)^2$$

$$= 24a^2x^2$$

$$24a^2 = 384$$

$$a^2 = 16$$

$$\underline{a = \pm 4}$$