

10th November



Corbettmaths

$$\sin^2 x + \cos^2 x = ?$$

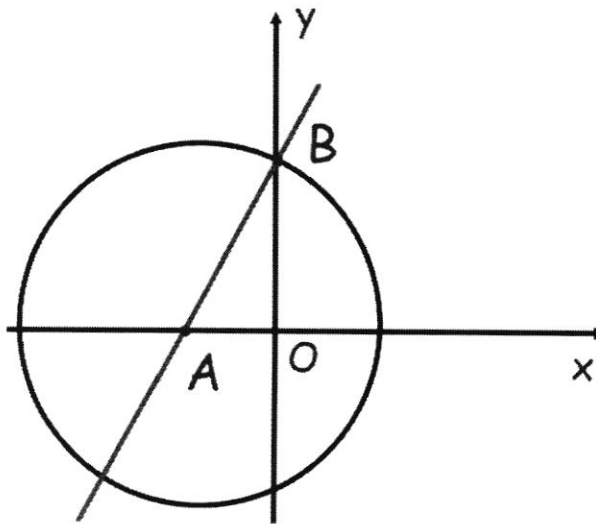
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Write down the coordinates of the minimum point on the curve

$$y = x^2 + 10x + 13$$

$$\begin{aligned} &= (x+5)^2 - 25 + 13 \\ &= (x+5)^2 - 12 \\ \text{Min pt } &\underline{(-5, -12)} \end{aligned}$$

Shown below is the circle, centre A, with equation  $(x+9)^2 + y^2 = 225$



Find the equation of the line passing through A and B.

$$A (-9, 0)$$

$$\begin{aligned} B: x=0 \quad 81 + y^2 &= 225 \Rightarrow y^2 = 144 \\ &\Rightarrow y = 12 \\ &\quad (0, 12) \end{aligned}$$

$$\text{Grad } AB = \frac{12}{9} = \frac{4}{3}$$

$$\text{Eqn of } AB \text{ is } \underline{y = \frac{4}{3}x + 12}$$

The transformation matrix **M** represents a  $270^\circ$  clockwise rotation about the origin.

Write down matrix **M**

$$\begin{aligned} (1, 0) &\rightarrow (0, 1) \\ (0, 1) &\rightarrow (-1, 0) \end{aligned}$$

$$\underline{\underline{M = \begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix}}}$$