



Air maths tuition

Interact, engage and perform

Parametric Equations: Converting to Cartesian form (2)

Find the cartesian equation of the curves given by the parametric equations

① $x = 2\cos\theta$, ① $y = 5\sin\theta$ ② ② $x = 4\sin\theta$, ① $y = \cos 2\theta$ ②

① $\cos^2\theta + \sin^2\theta \equiv 1$

from ① $\cos\theta = \frac{x}{2}$, from ② $\sin\theta = \frac{y}{5}$

Since $\cos^2\theta + \sin^2\theta = 1$

$$\therefore \frac{x^2}{4} + \frac{y^2}{25} = 1$$
$$\therefore 25x^2 + 4y^2 = 100$$

② $\cos 2\theta \equiv 1 - 2\sin^2\theta$

from ① $\sin\theta = \frac{y}{4}$

Since $\cos 2\theta = 1 - 2\sin^2\theta$

$$\therefore y = 1 - 2\frac{y^2}{16}$$
$$\therefore y = 1 - \frac{y^2}{8}$$
$$\therefore 8y = 8 - y^2$$

With the acknowledgement of [Exam Solutions](#).
Find lots more revision sheets on [Air Maths Tuition](#).
[This Video](#)



Exam Solutions
maths made easy