

20th November



Corbettmaths

Write down the exact value of $\cos 570^\circ$

$$= \cos 210^\circ$$

$$= \frac{-\sqrt{3}}{2}$$

Given that

$$(x+3)(x-5)(x+a) \equiv x^3 + 4x^2 - 27x - 90$$

Find the value of a

$$3 \times -5 \times a = -90$$

$$\underline{a = 6}$$

$$y = (\sqrt{x})^{12}$$

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

$$y = x^6$$

$$\underline{\frac{dy}{dx} = 6x^5}$$

Show that $3\cos^2\theta \equiv 3 - 3\sin^2\theta$

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

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

$$\underline{3\cos^2\theta \equiv 3 - 3\sin^2\theta}$$

Hence solve $3\cos^2\theta - 5\sin\theta = 1$
for $0^\circ \leq \theta \leq 360^\circ$

$$3 - 3\sin^2\theta - 5\sin\theta = 1$$

$$0 = 3\sin^2\theta + 5\sin\theta - 2$$

$$0 = (3\sin\theta - 1)(\sin\theta + 2)$$

$$\sin\theta = \frac{1}{3} \text{ or } -2 \text{ (rejected)}$$

$$\underline{\theta = 19.5^\circ, 160.5^\circ}$$