

8th December



Corbettmaths

<p>Solve $125^x = 25^{x+5}$</p>	$(5^3)^x = (5^2)^{x+5}$ $3x = 2x + 10$ $\underline{x = 10}$
<p>Solve</p> $\tan x = 6 \sin x$ <p>for $0^\circ < x < 360^\circ$</p>	$\frac{\sin x}{\cos x} = 6 \sin x$ $\sin x = 6 \sin x \cos x$ $0 = 6 \sin x \cos x - \sin x$ $0 = \sin x (6 \cos x - 1)$ $\sin x = 0 \text{ or } \cos x = \frac{1}{6}$ $\underline{x = 80.4^\circ, 180^\circ, 279.6^\circ}$
<p>The equation of a curve is</p> $y = x^2 - 3x - 8$ <p>P is a point on the curve.</p> <p>The tangent to the curve at P has gradient 5</p> <p>Work out the coordinates of P</p>	$\frac{dy}{dx} = 2x - 3$ <p>At P $2x - 3 = 5$</p> $\Rightarrow x = 4$ $\Rightarrow \underline{P(4, -4)}$