VIDEO PLAYLIST: parkermaths.com/y2trig1

TRIGONOMETRY ▸ RECIPROCAL TRIGONOMETRIC IDENTITIES ▸ KEY FACTS

$$\tan^2 x + 1 \equiv \sec^2 x \qquad \cot^2 x + 1 \equiv \operatorname{cosec}^2 x$$

SECANT, COSECANT AND COTANGENT ▸ SOLVING EQUATIONS ▸ EXAMPLE-PROBLEM PAIRS

4E. Solve the equation $\cot\theta \operatorname{cosec}\theta = 2\operatorname{cosec}\theta$, giving all values of θ in the interval $-\pi \leq \theta \leq \pi$.

Give your answers in radians to three significant figures.

4P. Solve the equation $2\operatorname{cosec}^2\theta + 5\operatorname{cosec}\theta = 3$, giving all values of x in the interval $0 \leq \theta \leq 2\pi$.

Give your answers in radians to 2 decimal places.

5E. (a) Simplify $\sec\theta \cot\theta$.

(b) Simplify $\dfrac{\cot\theta}{\operatorname{cosec}\theta}$.

5P. (a) Simplify $\sec\theta \sin\theta$.

(b) Simplify $\dfrac{\operatorname{cosec}\theta}{\sec\theta}$.

6E. Solve the equation $3\operatorname{cosec}\theta = 2\tan\theta$, giving all values of θ in the interval $\theta \in [0,2\pi]$.

Give your answers in terms of π.

6P. Solve the equation $\sec x - \cot x = 0$, giving all values of x in the interval $x \in [0,2\pi]$.

Give your answers in radians to 2 decimal places.

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

Divide both sides by $\sin^2 x$

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

Divide both sides by $\cos^2 x$

7E. Solve the equation $2\tan^2\theta = 1 - \sec\theta$, giving all values of θ in the interval $\theta \in [0°, 360°]$.

Give your answers to the nearest degree.

7P. Solve the equation $\operatorname{cosec}^2 x + 2\cot x = 9$, giving all values of x in the interval $x \in [0,2\pi]$.

Give your answers in radians to three significant figures.