

## SOLVING TRIG. EQUATIONS (EXAMPLES)

$2 \sin x = 1$ <p>1. <math>\sin x = \frac{1}{2}</math></p> $x = \boxed{30^\circ \text{ or } 150^\circ}$
$4 \cos^2 x = 1$ $\cos^2 x = \frac{1}{4}$ <p>2. <math>\cos x = \pm \frac{1}{2}</math></p> $x = \boxed{60^\circ, 120^\circ, 240^\circ, 300^\circ}$
$2 \sin 4x = 1$ $\sin \boxed{4x} = \frac{1}{2}$ <p>3. <math>\boxed{4x} = 30^\circ + n(360^\circ) \quad \text{OR} \quad \boxed{4x} = 150^\circ + n(360^\circ)</math></p> $x = \frac{30^\circ}{4} + n(90^\circ) \quad \text{OR} \quad x = \frac{150^\circ}{4} + n(90^\circ)$ $x = \boxed{7.5^\circ, 97.5^\circ, 187.5^\circ, 277.5^\circ, \text{ OR } 37.5^\circ, 127.5^\circ, 217.5^\circ, 307.5^\circ}$
$2 \sin^2 x = 5 \sin x + 3$ $2 \sin^2 x - 5 \sin x - 3 = 0$ $(2 \sin x + 1)(\sin x - 3) = 0$ <p>4. <math>2 \sin x + 1 = 0 \quad \text{OR} \quad \sin x - 3 = 0</math></p> $\sin x = \frac{-1}{2} \quad \text{OR} \quad \sin x = 3$ $x = \boxed{210^\circ, 330^\circ}$
$\cos^2 x = \cos x$ $\cos^2 x - \cos x = 0$ $\cos x(\cos x - 1) = 0$ <p>5. <math>\cos x = 0 \quad \text{OR} \quad \cos x - 1 = 0</math></p> $\cos x = 1$ $x = \boxed{90^\circ, 270^\circ \text{ OR } 0^\circ}$