

Solve for the unknown variable. Give all of the exact solutions on the interval of $[0, 2\pi)$.

$$\tan^2 \theta + \tan \theta = 0$$

$$\sin 3\theta = -1$$

$$\tan \theta (\tan \theta + 1) = 0$$

$$\tan \theta = 0 \quad \tan \theta = -1$$

$$0, 180 \quad 135^\circ, 315^\circ$$

$$0, \pi \quad \frac{3\pi}{4}, \frac{7\pi}{4}$$

$$2\sin^2 \theta - 1 = 0$$

$$2\sin^2 \theta - \sin \theta - 1 = 0$$

$$x^2 + x - 2 \quad (x-1)(x+2)$$

$$\sec^2 x + \sec x - 2 = 0$$

$$\cos^3 x = \cos x$$

$$(\sec x - 1)(\sec x + 2) = 0$$

$$\sec x = 1 \quad \sec x = -2$$

$$\cos x = 1 \quad \cos x = -\frac{1}{2}$$

$$0^\circ \quad 120^\circ, 240^\circ$$

$$(2\sin x + 1)(\sin x + 1)$$

$$2\sin^2 x + 3\sin x + 1 = 0$$

$$\sin^2 x + \sin x = 0$$

$$2x^2 + 3x + 1 = 0$$

$$(2x+1)(x+1)$$

$$(2x^2 + 2x) + (x+1)$$

$$2x(x+1) + 1(x+1)$$

$$(2x+1)(x+1)$$