OVERVIEW OF TRIGONOMETRIC EQUATIONS

1 Solve for $0 \leq x \leq 2\pi$.

(a) $\sin x = 1$ **(b)** $\cos x = 0$ **(c)** $\tan x = -1$ **(d)** $\sqrt{3}\operatorname{cosec} x = 2$ **(e)** $\sec x = -2$

(f) $\cot x = \sqrt{3}$ **(g)** $2\sin\left(x - \frac{\pi}{6}\right) + 1 = 0$ **(h)** $\cos \frac{x}{2} = 1$ **(i)** $2\sin^2 x = 1$ **(j)** $\sin x = 0.3894$

3 Solve for $-\pi \leq x \leq \pi$.

(a) $\cos^2 x - 2\cos x + 1 = 0$ **(b)** $\sin^2 x = \sin x$ **(c)** $\cos 2x = \sin x$

3 Solve for $-\pi \leq x \leq \pi$.

(d) $\sin^2 x = 1 - \cos x$ **(e)** $\cos 2x = 2 + \cos x$ **(f)** $\tan 2x = \cot x$

5 Solve for $0 \leq \theta \leq 2\pi$.

(a) $\sqrt{2}\sin 2\theta + 1 = 0$ **(b)** $\tan\left(\theta - \frac{\pi}{3}\right) = -\sqrt{3}$ **(c)** $\cos 2\theta \cos\frac{\pi}{6} - \sin 2\theta \sin\frac{\pi}{6} = 0.5$

6 Solve for $-\pi \leq \theta \leq \pi$.

(a) $\cos 3\theta = \cos \theta$ **(b)** $2\cos 2\theta = 4\cos \theta - 3$ **(c)** $3\tan 2\theta = 2\tan \theta$

6 Solve for $-\pi \le \theta \le \pi$.

(d) $\tan\left(2\theta - \frac{\pi}{4}\right) + 1 = 0$ **(e)** $2\cos\left(2\theta - \frac{\pi}{3}\right) = \sqrt{3}$ **(f)** $2\sin^2\theta + \cos\theta = 1$

8 Solve for $0 \leq \theta \leq 2\pi$.

(a) $\tan^3\theta - \tan\theta = 0$ **(b)** $\tan\theta = \sin\theta$ **(c)** $\sec 2\theta = \operatorname{cosec} 2\theta$

8 Solve for $0 \leq \theta \leq 2\pi$.

(d) $\sin 2\theta = \tan \theta$

(e) $\sin 3\theta = \sin 2\theta$