To convert radians to degrees or vice versa, use

Ex Convert $\frac{7\pi}{9}$ to degrees.

Ex Convert 50° to radians.

Ex Sketch the following angles in standard position.

(a). $\theta_1 = \frac{2\pi}{3}$ **(b).** $\theta_2 = -\frac{4\pi}{3}$ **(c).** $\theta_2 = \frac{8\pi}{3}$

Trigonometric Functions and Right Triangles

$\sin\theta =$ $\csc\theta =$

$\cos\theta =$ $\sec\theta =$

$\tan\theta =$ $\cot\theta =$

Trigonometric Functions and Any Angle

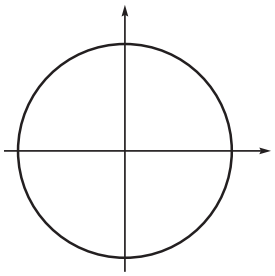
$\sin\theta =$ $\csc\theta =$

$\cos\theta =$ $\sec\theta =$

$\tan\theta =$ $\cot\theta =$

Ex If $\sec\theta = -3$ and $\pi < \theta < \dfrac{3\pi}{2}$, find all six trigonometric ratios.

Unit Circle and Common Angles



Ex Find the exact value of $\tan\dfrac{\pi}{6}$.

Ex Find the exact value of $\cos\left(-\dfrac{3\pi}{4}\right)$.

Trigonometric Identities

Reciprocal:

Pythagorean:

Half-Angle: $\cos^2\theta = \dfrac{1}{2} + \dfrac{1}{2}\cos 2\theta$ $\sin^2\theta = \dfrac{1}{2} - \dfrac{1}{2}\cos 2\theta$

Double-Angle: $\sin 2\theta = 2\sin\theta\cos\theta$

$$\begin{aligned}\cos 2\theta &= \cos^2\theta - \sin^2\theta \\ &= 2\cos^2\theta - 1 \\ &= 1 - 2\sin^2\theta\end{aligned}$$