KENNESAW STATE UNIVERSITY

# Calculus 1 Prep - CSM PRESS

## Trig and Inverse Trig Functions – Summer 2025

1. Find all values of $\theta$ in $[0,2\pi)$ that satisfy the following equations.

$2\sin\theta + \sqrt{3} = 0$ $\sec\theta = 2$ $\tan\theta = \sqrt{3}$

$2\sin\theta\cos\theta = \sin\theta$ $\sec^2\theta = 2$ $\sin^2\theta + \sin\theta - 2 = 0$

2. Simplify the following trigonometric expressions. Your answers should not contain fractions.

$\tan x - \dfrac{\sec^2 x}{\tan x}$ $\sec x - \dfrac{\cos x}{1+\sin x}$

3. Evaluate each expression.

a. $\sin^{-1}\left(-\frac{1}{2}\right)$

b. $\cos^{-1}\left(\frac{\sqrt{2}}{2}\right)$

c. $\cos^{-1}\left(-\frac{1}{2}\right)$

d. $\tan^{-1}(-\sqrt{3})$

e. $\cos^{-1}\left(\cos\left(\frac{7\pi}{4}\right)\right)$

f. $\sin^{-1}\left(\sin\left(\frac{\pi}{3}\right)\right)$