

# Formula Sheet for Exam 1

July 12, 2007

A few trig identities:

$$\sin^2 x + \cos^2 x = 1$$

$$\sin(a + b) = \sin(a) \cos(b) + \sin(b) \cos(a)$$

Selected trig derivatives:

$$\frac{d}{dx} \tan x = \sec^2 x$$

$$\frac{d}{dx} \cot x = -\csc^2 x$$

$$\frac{d}{dx} \sec x = \sec(x) \tan(x)$$

$$\frac{d}{dx} \csc x = -\csc(x) \cot(x).$$

Exact values of trig functions

	$\theta = 0$	$\theta = \frac{\pi}{6}$	$\theta = \frac{\pi}{4}$	$\theta = \frac{\pi}{3}$	$\theta = \frac{\pi}{2}$
$\cos(\theta)$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
$\sin(\theta)$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
$\tan(\theta)$	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	undefined