

# Formula Sheet

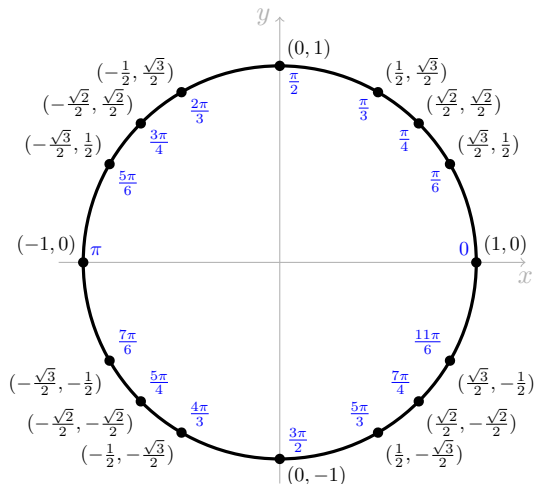
## Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

## Point-Slope Form

$$y - y_1 = m(x - x_1)$$

## Common Angles



## Trigonometry Ratios

- $\tan x = \frac{\sin x}{\cos x}$      $\cot x = \frac{\cos x}{\sin x}$
- $\sec x = \frac{1}{\cos x}$      $\csc x = \frac{1}{\sin x}$

## Trig Identities

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

## Selected Derivatives

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

## Definition of Derivative

- $\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$ , or
- $\lim_{x \rightarrow c} \frac{f(x) - f(c)}{x - c}$

## Linear Approximation

- $L(x) = f(a) + f'(a)(x - a)$

## Summation Formulas

- $\sum_{i=1}^n i = \frac{n(n+1)}{2}$
- $\sum_{i=1}^n i^2 = \frac{n(n+1)(2n+1)}{6}$

## Riemann Sum

- $A = \lim_{n \rightarrow \infty} \sum_{i=1}^n f(x_i) \Delta x$