

Formula Sheet

- Integrals:

$$\int m \, dx = mx + C$$

$$\int \sec^2 x \, dx = \tan x + C$$

$$\int x^n \, dx = \frac{1}{n+1} x^{n+1} + C, \quad n \neq -1$$

$$\int \csc^2 x \, dx = -\cot x + C$$

$$\int \frac{1}{x} \, dx = \ln |x| + C$$

$$\int \sec x \tan x \, dx = \sec x + C$$

$$\int \frac{1}{1+x^2} \, dx = \arctan x + C$$

$$\int \csc x \cot x \, dx = -\csc x + C$$

$$\int e^x \, dx = e^x + C$$

$$\int \tan x \, dx = -\ln |\cos x| + C$$

$$\int \sin x \, dx = -\cos x + C$$

$$\int \sec x \, dx = \ln |\sec x + \tan x| + C$$

$$\int \cos x \, dx = \sin x + C$$

- Trigonometric functions:

$$\tan x = \frac{\sin x}{\cos x}$$

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

$$\cot x = \frac{\cos x}{\sin x}$$

$$\tan^2 x + 1 = \sec^2 x$$

$$\tan x = \frac{1}{\cot x}$$

$$\cot^2 x + 1 = \csc^2 x$$

$$\sec x = \frac{1}{\cos x}$$

$$\sin^2 x = \frac{1 - \cos 2x}{2}$$

$$\csc x = \frac{1}{\sin x}$$

$$\cos^2 x = \frac{1 + \cos 2x}{2}$$

	0	$\pi/12$	$\pi/6$	$\pi/4$	$\pi/3$	$\pi/2$
$\sin x$	0	$\frac{\sqrt{3}-1}{2\sqrt{2}}$	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
$\cos x$	1	$\frac{\sqrt{3}+1}{2\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0