ANTIDERIVATIVES YOU DON'T NEED TO DERIVE

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

$$\int e^{kx} dx = \frac{1}{k} e^{kx} + C$$

$$\int \sin(kx) dx = -\frac{1}{k} \cos(kx) + C$$

$$\int \cos(kx) dx = \frac{1}{k} \sin(kx) + C$$

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

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

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

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

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

$$\int \sinh x dx = \cosh x + C$$

$$\int \cosh x dx = \sinh x + C$$

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

TRIG IDENTITIES

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

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

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

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

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

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

$$\sin 2x = 2 \sin x \cos x$$

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

$$\sin a \sin b = 1/2[\cos(a-b) - \cos(a+b)]$$

$$\sin a \cos b = 1/2[\sin(a-b) + \sin(a+b)]$$

$$\cos a \cos b = 1/2[\cos(a-b) + \cos(a+b)]$$

$$\sin(a/2) = +- \sqrt{\frac{1-\cos a}{2}}$$

$$\cos(a/2) = +- \sqrt{\frac{1+\cos a}{2}}$$

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

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

$$\sin a + \sin b = 2\sin(\frac{a+b}{2})\cos(\frac{a-b}{2})$$

$$\sin a - \sin b = 2\cos(\frac{a+b}{2})\sin(\frac{a-b}{2})$$

$$\cos a + \cos b = 2\cos(\frac{a+b}{2})\cos(\frac{a-b}{2})$$

$$\cos a - \cos b = -2\sin(\frac{a+b}{2})\sin(\frac{a-b}{2})$$

$$\tan(x+y) = \frac{\tan x + \tan y}{1 - \tan x \tan y}$$

$$\tan(x-y) = \frac{\tan x - \tan y}{1 + \tan x \tan y}$$