

Wednesday

Chapter $\Rightarrow$ Integration

• Indefinite Integration.

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

dx

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

$$\int g(x) dx = f(x) + C$$

$g(x)$ is the derivative of $f(x) + C$
 $f(x) + C$ is the anti derivative of $g(x)$,
integration

$$\int g(x) dx = f(x) + C$$

Sign
of integrand

Integrands

(Primitive)
(Integral)

constant

$$\sin x \rightarrow \cos x$$

$$-\cos x \rightarrow \sin x$$

$$\tan^2 x \rightarrow \sec^2 x$$

$$\cot x \rightarrow -\operatorname{cosec}^2 x$$

$$\operatorname{cosec} x \rightarrow -\operatorname{cosec} x \cot x$$

$$\sec \rightarrow \sec x \tan x$$

Integ.

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

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

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

$$\int \operatorname{cosec}^2 x dx = -\cot x + C$$

$$\int \operatorname{cosec} x \cot x dx = -\operatorname{cosec} x + C$$

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