

$$10.) \int \csc x \cdot \cot x \, dx = -\csc x + C$$

$$11.) \int \tan x \, dx = \ln |\sec x| + C \quad (\text{Proof is on prior Page})$$

Lecture 29-8-14 Professor Shabanskaya Calculus 1760-002
Table of Indefinite Integrals

$$1.) \int (f(x) + g(x)) \, dx = \int f(x) \, dx + \int g(x) \, dx$$

$$2.) \int k \cdot f(x) \, dx = k \int f(x) \, dx \quad (k \neq 0 \text{ is a constant})$$

$$3.) \int x^n \, dx = \frac{x^{n+1}}{n+1} + C, \quad n \neq -1, \text{ is any real number}$$

$$4.) \int \frac{1}{x} \, dx = \int \frac{dx}{x} = \ln |x| + C$$

$$5.) \int \sin x \, dx = -\cos x + C$$

$$6.) \int \cos x \, dx = \sin x + C$$

$$7.) \int \sec^2 x \, dx = \tan x + C$$

$$8.) \int \csc^2 x \, dx = -\cot x + C$$

$$9.) \int \tan x \, dx = \ln |\sec x| + C$$

$$10.) \int \cot x \, dx = -\ln |\csc x| + C$$

$$11.) \int \sec x \cdot \tan x \, dx = \sec x + C$$

$$12.) \int \csc x \cdot \cot x \, dx = -\csc x + C$$

$$13.) \int \frac{1}{1+x^2} \, dx = \int \frac{dx}{1+x^2} = \tan^{-1} x + C \quad (\tan^{-1} = \arctan)$$