

Math 17B
Kouba
Integral Formulas

Please MEMORIZE the following.

$$1.) \int K dx = Kx + C$$

$$2.) \int x^n dx = \frac{x^{n+1}}{n+1} + C \quad (\text{for } n \neq -1.)$$

$$3.) \int \frac{1}{x} dx = \ln|x| + C$$

$$4.) \int e^x dx = e^x + C$$

$$5.) \int a^x dx = \frac{a^x}{\ln a} + C$$

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

$$7.) \int \sin x dx = -\cos x + C$$

$$8.) \int \sec^2 x dx = \tan x + C$$

$$9.) \int \csc^2 x dx = -\cot x + C$$

$$10.) \int \sec x \tan x dx = \sec x + C$$

$$11.) \int \csc x \cot x dx = -\csc x + C$$

$$12.) \int \tan x dx = \ln|\sec x| + C$$

$$13.) \int \cot x dx = \ln|\sin x| + C$$

$$14.) \int \sec x dx = \ln|\sec x + \tan x| + C$$

$$15.) \int \csc x dx = \ln|\csc x - \cot x| + C$$

$$16.) \int \frac{1}{1+x^2} dx = \arctan x + C \quad \text{and} \quad \int \frac{1}{a^2+x^2} dx = \frac{1}{a} \arctan \frac{x}{a} + C$$