Math 17B
Kouba
Integral Formulas

Please MEMORIZE the following.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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