

Integration By Parts

- Used when there is a product inside of an integral and we cannot use u-substitution.

The formula:

$$\int u dv = [uv] - \int v du$$

Example #1:

$$\int x e^x dx$$

LIPET

This helps us determine what we should let u equal.

Lesson #78

Example #2:

$$\int x^2 e^x dx$$

Example #3:

$$\int \ln(x) dx$$

Definite Integrals with Integration by Parts:

$$\int_a^b u dv = [uv]_a^b - \int_a^b v du$$

Example #4:

$$\int_0^{\frac{\pi}{6}} x \sin(3x) dx$$