

DATE: \_\_\_\_\_

## Integration by Parts

Integration by Parts – used when you have a function multiplied by another function  
(~ product rule, if substitution won't work)

$$\frac{d}{dx}(f(x)g(x)) =$$

• **Find each indefinite integral.**

• *Example 1:*

•  $\int xe^x dx$

*Example 2:  $\int x^4 \ln x \, dx$*

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*Example 3:  $\int x \cos 3x \, dx$*

*Example 4:  $\int x^2 e^x dx$*

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*Example 5:  $\int e^x \sin x dx$*