

Math 8  
Homework Set #4  
Integration by Parts

**Practice Problems**

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Evaluate the following integrals:

1)  $\int_0^{\pi/2} x \sin 2x \, dx$

5)  $\int_1^4 e^{\sqrt{x}} \, dx$

2)  $\int \ln(x+1) \, dx$

6)  $\int \arctan x \, dx$  (Note:  $\frac{d}{dx} \arctan x = \frac{1}{1+x^2}$ )

3)  $\int e^{2x} \sin x \, dx$

4)  $\int x^5 \ln x \, dx$

7)  $\int \sin(\ln x) \, dx$

**Problems to Turn In**

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Evaluate the following integrals:

1)  $\int x \arctan x \, dx$

2)  $\int x^5 \cos(x^2) \, dx$