

**Project Based Math 112, Fall 2001**  
**Integration by Parts**  
**Activity, §5.6 (25 min)**

Integrate the following and mention which methods you use.

1.  $\int x \ln x \, dx =$

2.  $\int x(2 + x^2)\ln(2 + x^2) \, dx =$

3.  $\int x^3 \cos x^2 \, dx =$

4.  $\int x^2 (\ln x)^2 \, dx =$

5.  $\int e^{2x} \cos x \, dx =$

6.  $\int e^{2x} \sin(e^x) \, dx =$