Integration by Parts (Extra Practice)

1. $\int x \cos 5x \, dx$

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

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

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

5. $\int \frac{\ln x}{x^2} \, dx$

6. $\int \frac{x}{e^{2x}} \, dx$