

Section 7.1  
Integration by Parts  
Additional Problems

Evaluate each of the following:

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

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

3.  $\int x(3x+5)^{3/2} dx$

4.  $\int 3x(5x-2)^{-3} dx$

5.  $\int x \ln x dx$

6.  $\int x^2 \ln x dx$

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

8.  $\int_0^2 x(2x+5)^{1/2} dx$

9.  $\int_0^2 x^2 (x+1)^{-4} dx$

Answers:

1.  $x e^x - 2e^x + C$

2.  $\frac{1}{3} x e^{3x} - \frac{1}{9} e^{3x} + C$

3.  $\frac{2}{15} x(3x+5)^{5/2} - \frac{4}{315} (3x+5)^{7/2} + C$

4.  $-\frac{3}{10} x(5x-2)^{-2} - \frac{3}{50} (5x-2)^{-1} + C$

5.  $\frac{1}{2} x^2 \ln x - \frac{1}{4} x^2 + C$

6.  $\frac{1}{3} x^3 \ln x - \frac{1}{9} x^3 + C$

7.  $x^2 e^2 - 2x e^x + 2e^x + C$

8.  $\frac{9}{5} + \frac{5\sqrt{5}}{3}$

9.  $\frac{8}{81}$