8.2 Integration by Parts

Name: Date: June 1, 2015

P 12. Find the indefinite integral.

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

P 14. Find the indefinite integral.

$$\int \frac{e^{1/t}}{t^2}\,dt$$

P 16. Find the indefinite integral.

$$\int x^5 \ln 3x\,dx$$

P 18. Find the indefinite integral.

$$\int \frac{\ln x}{x^3}\, dx$$

P 20. Find the indefinite integral.

$$\int \frac{x^3 e^{x^2}}{(x^2+1)^2}\, dx$$

P 22. Find the indefinite integral.

$$\int \frac{x}{\sqrt{6x+1}}\, dx$$

P 24. Find the indefinite integral.

$$\int t \csc t \cot t \; dt$$

P 26. Find the indefinite integral.

$$\int x^2 \cos x \; dx$$

P 28. Find the indefinite integral.

$$\int 4 \arccos x \; dx$$

P 30. Find the indefinite integral.

$$\int e^{4x} \cos 2x \, dx$$

P 39. Evaluate the definite integral.

$$\int_0^3 x e^{x/2} \, dx$$

P 46. Evaluate the definite integral.

$$\int_0^1 \ln(4 + x^2) \, dx$$

P 80. Find the area of the region bounded by the graphs of

$$y = \frac{1}{10}xe^{3x},\ y = 0,\ x = 0,\ \text{ and } x = 2$$

P 84. Given the region bounded by the graphs of $y = x \sin x,\ y = 0,\ x = 0$, and $x = \pi$, find

(a) the area of the region.

(b) the volume of the solid generated by revolving the region about the x-axis.

(c) the volume of the solid generated by revolving the region about the y-axis.