

Warm-Up Problems
February 3, 2003

1. Find the integrals (what technique will you use?)

(a)

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

Solution: $e^{2x}(x/2 - 1/4) + C$

(b)

$$\int \ln(3\sqrt{x}) dx$$

Solution: $x \ln 3 + (x \ln x - x)/2 + C$

(c)

$$\int x \sin(\pi x) dx$$

Solution: $-(x \cos(\pi x))/\pi + (\sin(\pi x))/\pi + C$

(d)

$$\int x^3 \sin x^2 dx$$

Solution: $-x^2/2(\cos(x^2) + (\sin(x^2))/2) + C$