1. The Integration by Parts Formula

2. Evaluate the integrals. What strategy is demonstrated?

   (a) $\int xe^x \, dx$

   (b) $\int \ln(x) \, dx$

   (c) $\int x^2 \cos(x) \, dx$

(d) $\displaystyle\int e^x \cos(x)\, dx$

(e) $\displaystyle\int_0^1 xe^{-3x}\, dx$

(f) Find the area bounded between $f(x) = \arctan(x)$ and the y-axis between $x = 0$ and $x = 2$.