

## SECTION 3.1: INTEGRATION BY PARTS

### 1. The Integration by Parts Formula

### 2. Evaluate the integrals. What strategy is demonstrated?

(a)  $\int x e^x dx$

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

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

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

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

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