1. Find the indicated integral.

   a. $\int 1 dx$ **b.** $\int \frac{1}{x^2} dx$ **c.** $\int \sqrt{x} dx$ **d.** $\int \frac{2}{\sqrt{x}} dx$ **e.** $\int e^{2x} dx$ **f.** $\int \frac{2}{x} dx$

2. Find the indicated integral.

   a. $\int \frac{x^2 + 2x + 1}{x^2} dx$ **b.** $\int \sqrt{t}(t^2 - 1) dt$ **c.** $\int (e^t + 1)^2 dt$ **d.** $\int \ln(e^{-x^2}) dx$

3. Solve the given initial value problem for $y = f(x)$.

$$\frac{dy}{dx} = \frac{2}{x} - \frac{1}{x^2}, \, y(-1) = 1$$