

**Instructions.** Show all work, with clear logical steps. No work or hard-to-follow work will lose points.

**Problem 1.** (4 points) Solve for  $y$  as a function of  $t$  when

$$y' = -\frac{6t}{y}.$$

**Problem 2.** (3 points) Compute

$$\int \frac{\ln x}{x^2} dx$$

**Problem 3.** (3 points) Compute

$$\int \frac{(\ln x)^2}{x} dx$$