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

**Problem 1.** (3 points) Switch the order of integration of the following integral.

$$\int_0^1 \int_{e^x}^e f(x,y)\,dy\,dx$$

**Problem 2.** (3 points) Switch the order of integration of the following integral.

$$\int_0^1 \int_{x^2}^x f(x,y)\,dydx$$

**Problem 3.** (4 points) Evaluate

$$\iint_D \frac{1}{x^2+7}\,dA,$$

where $D$ is the region bounded by $y = 5x$, the $x$-axis and $x = 2$.