

Show all work. 5 points each.

1) Find the limits of integration needed to evaluate the integral $\iint_D e^{x/y} dA$ with $D = \{(x, y) | 1 \leq y \leq 2, y \leq x \leq y^3\}$.

2) Set up the integrals for finding the mass and the center of mass of the lamina D with density function $\rho(x, y) = y$ with D being the region bounded by $y = e^x$, $y = 0$, $x = 0$ and $x = 1$