

Show all work. 5 points each.

1) Calculate the double integral $\iint_R \frac{xy^2}{x^2 + 1} dA$ with $R = \{(x, y) | 0 \leq x \leq 1, -3 \leq y \leq 4\}$

2) Find limits of integration for $\iint_D xy dA$ where D is enclosed by $x = 0$ and $x = \sqrt{1 - y^2}$