

Show all work. 5 points each.

1) Change the integral to one in Polar coordinates $\iint_D x^2 + y^2 dA$ where $D = \{(x, y) | x^2 + y^2 \leq 4 \text{ and } x \geq 0\}$

2) Draw the region D and find limits for integration for $\iint_D f(x, y) dA$ where D is bounded by $y = x + 2$ and $y = x^2$