

10/10/20

Multivariable Calc Lecture 12. Quiz

$$1) \int_{-1}^2 \int_{-1}^1 (x+y^2) dx dy$$

wRT x first.

$$\left. \frac{x^2}{2} + y^2 x \right|_{-1}^1$$

$$= \frac{1}{2} + y^2 - \left(\frac{1}{2} - y^2 \right)$$

$$= 2y^2$$

$$\int_{-1}^2 2y^2 dy = \left. \frac{2}{3} y^3 \right|_{-1}^2$$

$$= \frac{14}{3}$$

$$2) \iint_R \frac{x^2 y}{x^3 + 1} dA, \quad R = \{ (x, y) \mid 0 \leq x \leq 1, -1 \leq y \leq 1 \}$$

$$\int_0^1 \int_{-1}^1 \frac{x^2}{x^3 + 1} dx dy = \int_{-1}^1 y dy$$

$$= 0$$