

1. (5 pts) Find the slope in the **y-direction** at the point $P(2, 3, f(2, 3))$ on the graph of f when

$$f(x, y) = \arctan\left(\frac{x}{y}\right)$$

2. (5 pts) Find the volume of the solid lying under the surface

$$z = \frac{y}{x(x^2 + 1)}$$

and above the rectangle

$$D = \{(x, y) : 1 \leq x \leq 2, 0 \leq y \leq 2\}$$