

Taker Name:

Key

GTID: 90

Section:

Grader #1:

GTID: 90

§14.3: Partial derivatives

Find $\partial f / \partial x$ and $\partial f / \partial y$ for the given function.

$$f(x, y) = \frac{y}{x^2 + y^2}$$

$$\frac{\partial}{\partial x} \frac{y}{x^2 + y^2} = \frac{(x^2 + y^2)(0) - (y)(2x)}{(x^2 + y^2)^2}$$

$$= \frac{-2xy}{(x^2 + y^2)^2}$$

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

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

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

A

J

N

G2:

A

J

N

G3:

A

J

N