

## Class Worksheet 2/17/22

### Example 1:

(a) Let  $f(x, y) = 3x^2y - 2x^3y^4$  find the partial derivative functions  $f_x(x, y)$  and  $f_y(x, y)$ . Find  $f_y(2, 0)$ .

(b) Let  $f(x, y) = xe^{x^2y}$  find the partial derivative functions  $f_x(x, y)$  and  $f_y(x, y)$ .

(c) Let  $h(x, y) = \frac{x^2y}{x^3 + y^2}$  find the partial derivative function  $h_x(x, y)$ .

**Example 2:** The graph of a function  $z = g(x, y)$  is shown below. Is  $g_x(1, 1)$  positive or negative? Is  $g_y(1, 1)$  positive or negative? Explain your answers.

