7.2 – Practice

1. Compute all first-order partial derivatives of the given functions.

a) $f(x, y) = 5x^2 y + 3xy^3 + 2x - y + 1$

b) $f(x, y) = (x + xy + y)^3$

c) $z = ye^{xy}$

2. Find the second partials (including the mixed partials).

$$f(x, y) = 3x^3y^2 - 7xy + y^2$$

Q: A man leaves home and, after making three left turns, he ends up back at home, and finds two masked men waiting for him. What is happening?

$$f(x, y) = 3x^3y^2 - 7xy + y^2$$