

Partial derivative practice

For each of the following, compute the first-order partial derivatives.

1. $f(x, y) = x^2y + 4xy^5$

2. $f(x, y) = \left(y + \frac{3}{x^2}\right)(x - 2)$

3. $g(x, y) = \sqrt{3x + 5y}$

4. $z = \sin(3x) \cos(4y)$

5. $f(x, y) = \sin(5xy^2)$

6. $h(x, y) = e^{-(x^2+y^2)}$

7. $f(x, y, z) = 4x^2yz^3$

8. $w = xyz + 3x^2y^2z^2$

9. $g(x, y, z) = \sin(xyz)$

10. $f(x, y, z) = e^{-(x^2+y^2+z^2)}$