

Evaluate the following partial derivatives:

(1) $\frac{\partial f}{\partial x}$ where $f(x, y) = \sqrt{x} + x^1 y - x^5 y^1 + x^4$

(2) $\frac{\partial f}{\partial y}$ where $f(x, y) = \sqrt{x} + x^1 y - x^5 y^1 + x^4$

(3) $\frac{\partial f}{\partial y}$ where $f(x, y) = y^3 \cos(x - 1)$

(4) $\frac{\partial f}{\partial x}$ where $f(x, y) = 2x^3 y + y^2 - \frac{x}{y} + \ln\left(\frac{1}{x^2}\right)$

(5) $\frac{\partial f}{\partial y}$ where $f(x, y) = 2x^3 y + y^2 - \frac{x}{y} + \ln\left(\frac{1}{x^2}\right)$

(6) $\frac{\partial f}{\partial x}$ where $f(x, y) = y^3 \cos(x-1)$

(7) $\frac{\partial f}{\partial x}$ where $f(x, y) = e^{3x} \cos(y) - \ln(xy)$

(8) $\frac{\partial f}{\partial x}$ where $f(x, y) = x^2 y + y^2 - \frac{y}{x} + \ln(x^2)$

(9) $\frac{\partial f}{\partial y}$ where $f(x, y) = x^2 y + y^2 - \frac{y}{x} + \ln(x^2)$

(10) $\frac{\partial f}{\partial y}$ where $f(x, y) = x^3 \cos(y) + 3$

(11) $\frac{\partial f}{\partial x}$ where $f(x, y) = x^3 \cos(y) + 3$

(12) $\frac{\partial f}{\partial y}$ where $f(x, y) = e^{3x} \cos(y) - \ln(xy)$

(13) $\frac{\partial f}{\partial y}$ where $f(x, y) = e^{xy} + x^2 - yx^4 + 4$

(14) $\frac{\partial f}{\partial x}$ where $f(x, y) = e^{xy} + x^2 - yx^4 + 4$

(15) $\frac{\partial f}{\partial x}$ where $f(x, y) = x^2 \sin(3y)$

(16) $\frac{\partial f}{\partial y}$ where $f(x, y) = x^2 \sin(3y)$