

QUESTION

If $f(x, y) = xy + y^3 + x^2y \sin y$ determine $\frac{\partial f}{\partial x}$ and $\frac{\partial f}{\partial y}$.

ANSWER

$$f(x, y) = xy + y^3 + x^2y \sin y$$
$$\frac{\partial f}{\partial x} = y + 2xy \sin y, \quad \frac{\partial f}{\partial y} = x + 3y^2 + x^2(y \cos y + \sin y)$$