

Quiz 5

Signature: _____

Suppose that z and w are differentiable functions of x and y satisfying the equations

$$xy^2 + yz^2 + zw^2 + wx^2 = -9 \quad \text{and} \quad w^3 - xyzw = 4 .$$

Find $\frac{\partial z}{\partial y}$ at the point $(x, y, z, w) = (1, -1, -2, 2)$.