

Calculus - Multivariable Calculus

Grade 12 | Difficulty: Hard

1. Find the partial derivative of $f(x, y) = x^2 + y^2$.
2. Evaluate the double integral $\iint (x^2 + y^2) \, dA$ over a given region.
3. Determine the gradient of $f(x, y) = x^2 - y^2$.
4. Find the divergence and curl of a vector field.
5. Solve the Laplace equation $\nabla^2 f = 0$.