Math 321 Quiz 4
April 24/26

Your Name: Your Section:

Instructions: You have 20 minutes to solve the following problems within groups.

1. \( f \) is a scalar function of \( x, y, z \) and \( \vec{v} \) is a vector field. Show one of the following (5):
   a). \( \nabla \times (f \vec{v}) = \nabla f \times \vec{v} + f \nabla \times \vec{v} \)
   b). \( \nabla \times (\nabla f) = 0 \)

2. Use Green’s formula to calculate \( \int_{C} (-y^3 dx + x^2 y^2 dy) \) where \( C \) is the boundary of the square \( 0 \leq x \leq 1, 0 \leq y \leq 1 \) (5)

3. 3 thank-you marks for the attendance.