

Math 301-122 Quiz 1 (A)

Name:.....Sec#:.....ID#:.....Ser#:.....

Q.1: Evaluate $\int_0^4 \frac{1}{1+t^2} (3\hat{\mathbf{i}} - 3t\hat{\mathbf{j}} + t^2\hat{\mathbf{k}}) dt$

Q.2: Find the directional derivative of $f(x, y) = \frac{3xy}{x-y}$ at $(-1, -2)$ in the direction of the vector $3\hat{\mathbf{i}} - 4\hat{\mathbf{j}}$

Q.3: Find the curl and divergence of $\vec{F}(x, y, z) = yz \ln x \hat{\mathbf{i}} + (2x - 3yz)\hat{\mathbf{j}} + xy^2z^3\hat{\mathbf{k}}$.