

Quiz 5 Calc 3 Due 12/3/2002

1. Compute $\int_C \mathbf{F} \cdot d\mathbf{r}$ for the vector field $\mathbf{F}(x,y) = (x^2y - 1)\mathbf{i} - (y^2)\mathbf{j}$ where C is the rectangular path beginning at $(0,0)$, proceeding to $(3,0)$, then $(3,4)$, then $(0,4)$, and finally back to $(0,0)$.

2. If $\mathbf{F}(x,y,z) = x^2y\mathbf{i} - 8z\mathbf{j} + x^3yz\mathbf{k}$, compute $\text{curl } \mathbf{F}$.

3. If $\mathbf{F}(x,y,z) = x^2y\mathbf{i} - 8z\mathbf{j} + x^3yz\mathbf{k}$, compute $\text{div } \mathbf{F}$.