

(Easier) Practice Quiz 8 Calc 3 11/10/2009

1. Compute the curl of the vector field $\mathbf{F}(x,y,z) = x^2 \mathbf{i} - e^{yz} \mathbf{j} + \cos y \mathbf{k}$.

2. Compute the divergence of the vector field $\mathbf{F}(x,y,z) = x^2 \mathbf{i} - e^{yz} \mathbf{j} + \cos y \mathbf{k}$.

(Harder) Practice Quiz 8 Calc 3 11/10/2009

1. Compute the curl of the vector field $\mathbf{F}(x,y,z) = K(x^2 + y^2 + z^2)^{-3/2}(x\mathbf{i} + y\mathbf{j} + z\mathbf{k})$.

2. Compute the divergence of the vector field $\mathbf{F}(x,y,z) = K(x^2 + y^2 + z^2)^{-3/2}(x\mathbf{i} + y\mathbf{j} + z\mathbf{k})$.

[Note: Vector fields of this sort may be used to model photon flow from a star or neutrino flow from a supernova. Wow.]