

**(Easier) Practice Quiz 5    Calc 3    11/11/2008**

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 5    Calc 3    11/11/2008**

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.]