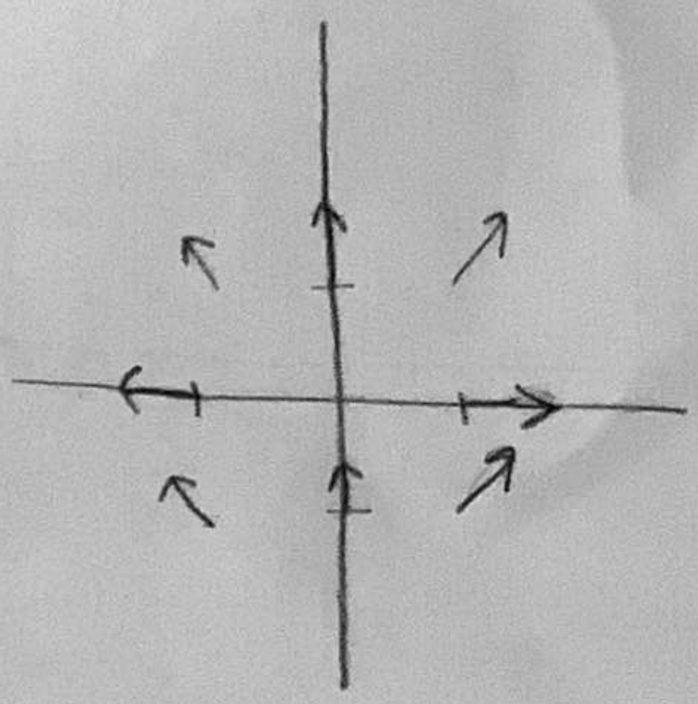
"QUIZ" for Lecture 17

NAME: (print!) Gulian Mulvey **Section:** ____

E-MAIL SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com (Attachment: q17FirstLast.pdf) ASAP BUT NO LATER THAN Nov. 5, 8:00pm

1. Sketch the vector planar vector field

$$\mathbf{F} = \langle x, y^2 \rangle \quad .$$



x	y	F
-1	-1	⟨-1, 1⟩
-1	0	⟨-1, 0⟩
-1	1	⟨-1, 1⟩
0	-1	⟨0, 1⟩
0	1	⟨0, 1⟩
0	0	⟨0, 0⟩
1	-1	⟨1, 1⟩
1	0	⟨1, 0⟩
1	1	⟨1, 1⟩

2. Find a potential function for the vector field $\mathbf{F}$

$$\mathbf{F} = \langle y\cos(xy), x\cos(xy) \rangle \quad .$$

$$\begin{vmatrix} i & j \\ \frac{\partial}{\partial x} & \frac{\partial}{\partial y} \\ y\cos(xy) & x\cos(xy) \end{vmatrix} = \frac{\partial}{\partial x}(x\cos(xy)) - \frac{\partial}{\partial y}(y\cos(xy))$$

$$= 1\cos(xy) \cdot -x\sin(xy) \cdot y - 1\cos(xy) \cdot -y\sin(xy) \cdot x$$

$$= -xy\cos(xy)\sin(xy) + xy\cos(xy)\sin(xy)$$

$$= 0$$

$$f = \int y\cos(xy)\,dx = \sin(xy) + g(y)$$

$$f = \sin(xy) \cdot$$