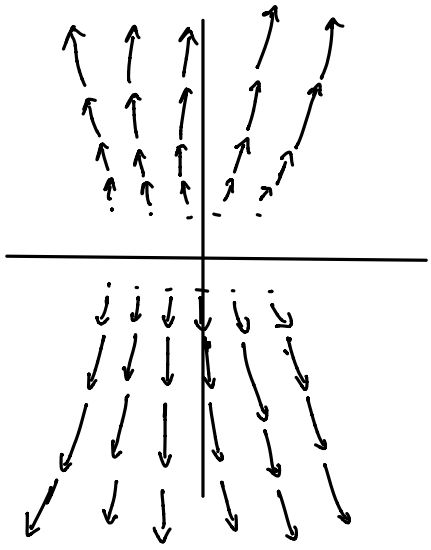
"QUIZ" for Lecture 17

NAME: (print!) Prathik Colla **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

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



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

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

$F = \nabla \phi$

$\frac{\partial F_1}{\partial y} = \frac{\partial F_2}{\partial x}$

$\frac{\partial \phi}{\partial x} = y\cos(xy)$, $\frac{\partial \phi}{\partial y} = x\cos(xy)$

$\phi_x = y\cos(xy)$

$\phi_y = x\cos(xy)$

$\boxed{\phi(x,y) = \sin(xy)}$