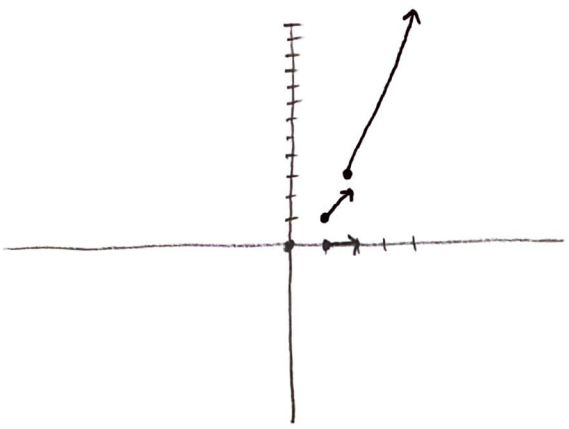
"QUIZ" for Lecture 17

NAME: (print!) SAI EMBAR **Section:** 23

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)	$\vec{F}(x,y)$
$(0,0)$	$\langle 0,0 \rangle$
$(1,0)$	$\langle 1,0 \rangle$
$(1,1)$	$\langle 1,1 \rangle$
$(2,8)$	$\langle 2,64 \rangle$

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

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

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

$\phi(x,y) = \sin(xy)$

$\phi_x = \cos(xy) \cdot y = y\cos(xy)$

$\phi_y = \cos(xy) \cdot x = x\cos(xy)$

$\phi(x,y) = \sin(xy)$