

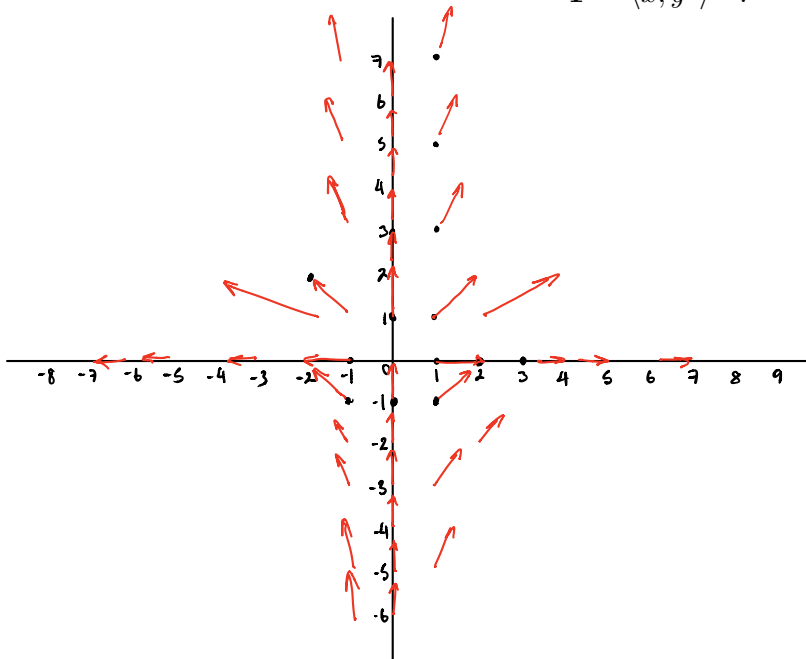
"QUIZ" for Lecture 17

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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

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



$1,0 \rightarrow 1,0$
 $0,1 \rightarrow 0,1$
 $-1,0 \rightarrow -1,0$
 $0,-1 \rightarrow 0,1$
 $2,0 \rightarrow 2,0$
 $3,0 \rightarrow 3,0$
 $0,3 \rightarrow 0,9$
 $-3,0 \rightarrow -3,0$
 $-2,2 \rightarrow -2,4$

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

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

$$f_x = y \cos(xy) \quad f_y = x \cos(xy)$$

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

$$x \sin(xy) + g(y) = x \sin(xy) + g'(y)$$

$$g(y) = g'(y)$$

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