

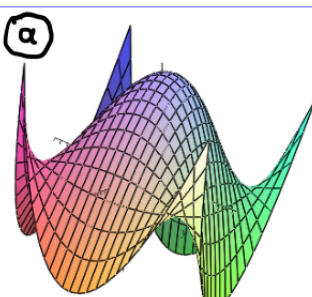
Panel 1

Name: _____

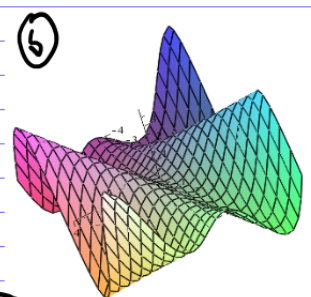
Quiz #5

① Match the graphs to the contour plots:

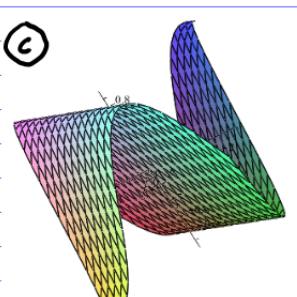
Ⓐ



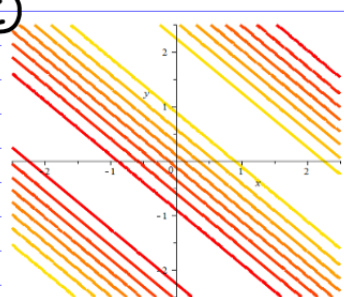
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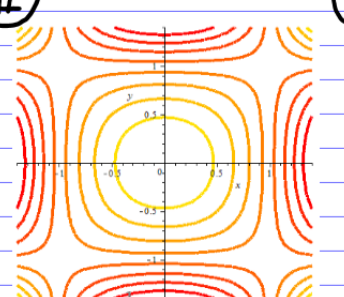
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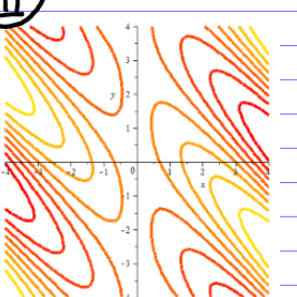
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Ⓢ



Ⓢ



Panel 2

② Do the following limits exist? If so, what are they?

a)
$$\lim_{(x,y) \rightarrow (0,0)} \frac{5y^2}{x^2 + y^2}$$

b)
$$\lim_{(x,y) \rightarrow (0,0)} \frac{3xy^3}{4x^2 + 5y^6}$$

c)
$$\lim_{(x,y) \rightarrow (0,0)} \frac{x^2 - y^2}{x - y}$$

Panel 3

③ Find the indicated derivatives:

a) $f(x,y) = xy \cos(x^2)$, $f_y =$

b) $f(x,y) = xy \cos(x^y)$, $f_{xy} =$

c) $f(x,y,z) = z e^{x^2+y^2+z^2}$, $\frac{\partial^2 f}{\partial z \partial y} =$