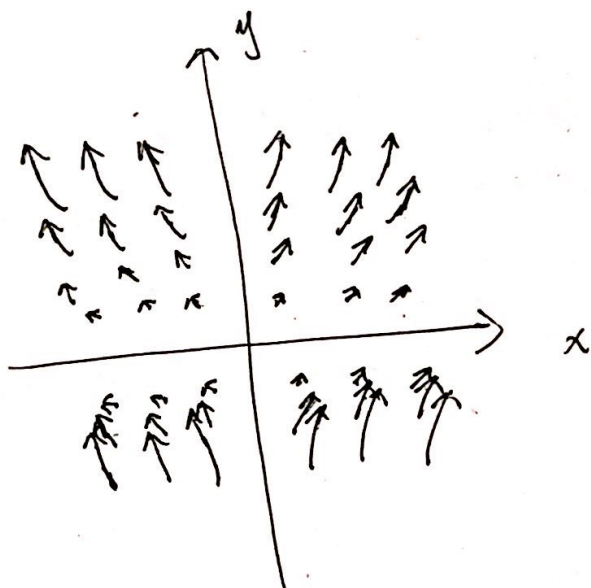


$$1. \quad \vec{F} = \langle x, y^2 \rangle$$



$$2. \quad \vec{F} = \langle y \cos(xy), x \cos(xy) \rangle$$

~~$$f_x = -y^2 \sin(xy)$$~~

~~$$f_y = -x^2 \sin(xy)$$~~

$$f_x = y \cos(xy)$$

~~$$f = \int (-y^2 \sin(xy)) dx$$~~

$$f = \int (y \cos(xy)) dx$$

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

~~$$\sin(xy) + g(y)$$~~

$$+ y \cos(xy) = x \cos(xy)$$

$$g(y) = x \cos(xy) - y \cos(xy)$$

$$y \cos(xy) + x \cos(xy) - y \cos(xy)$$

$$f = x \cos(xy)$$

