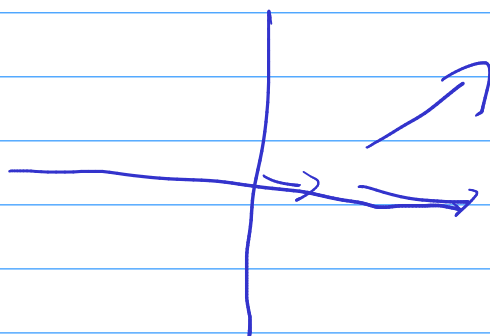


$$\vec{F} = \langle x, y^2 \rangle$$

$$\frac{\partial}{\partial x} x + \frac{\partial}{\partial y} y^2$$

$$1 + 2y$$



$$\frac{\partial}{\partial y} x - \frac{\partial}{\partial x} y^2 = 0$$

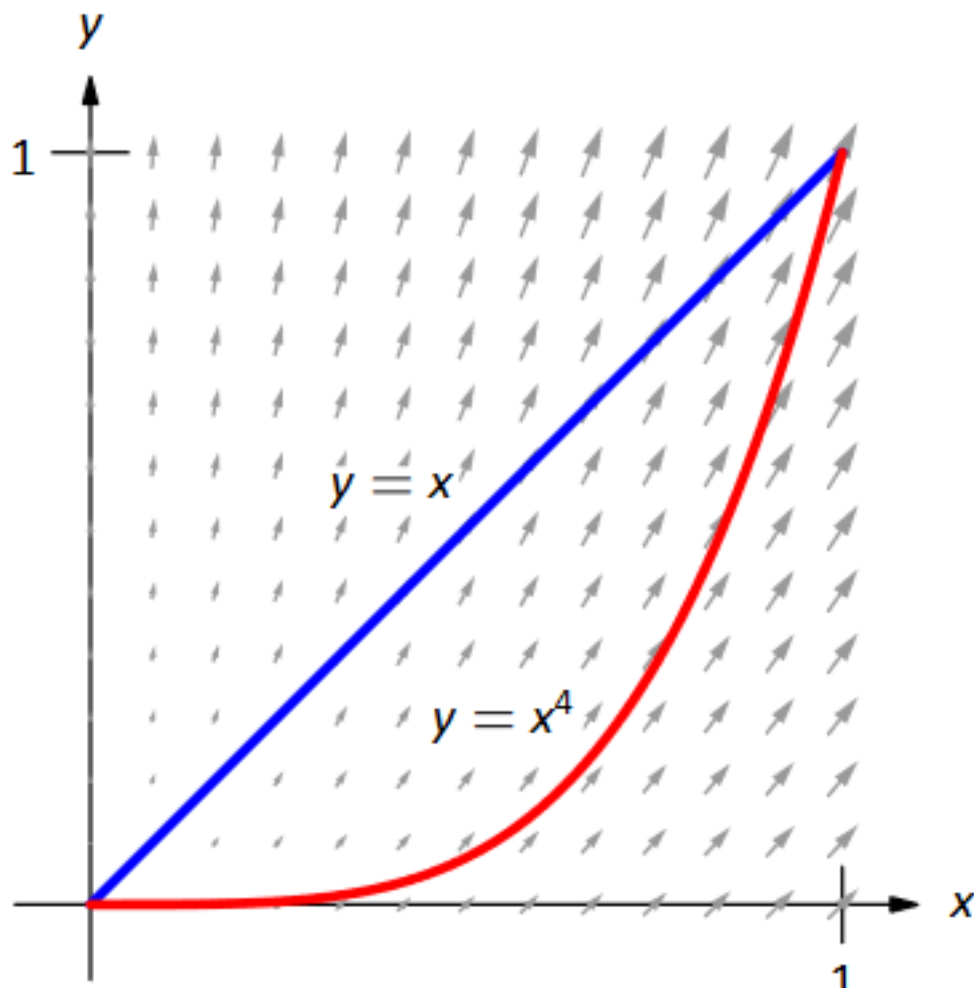
$$\vec{F} = \langle \cos(xy), \sin(xy) \rangle$$

$$\frac{\partial}{\partial x} \cos(xy) + \frac{\partial}{\partial y} \sin(xy)$$

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

$$\frac{\partial}{\partial y} \sin(xy) - \frac{\partial}{\partial x} \cos(xy)$$

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



$$\vec{F} = \langle x, x+y \rangle$$

$$C: y=x$$

$$\vec{r} = \langle t, t \rangle$$

from $t=0$ to $t=1$

$$\int_0^1 \vec{F} \cdot d\vec{r}$$

$$\int_0^1 \vec{F}(\vec{r}(t)) \cdot \vec{r}'(t) dt$$

$$\langle x, x+y \rangle$$

$$\langle t, t+t \rangle = \langle 1, 1 \rangle$$

$$\int_0^1 3t \, dt$$

$$\frac{3}{2} t^2 \Big|_0^1 = \frac{3}{2}$$

$$\vec{r} = \langle t, t^4 \rangle$$

$$\int_0^1 \vec{F}(\vec{r}(t)) \cdot \vec{r}'(t) \, dt$$

$$\int_0^1 \langle t, t+t^4 \rangle \cdot \langle 1, 4t^3 \rangle \, dt$$

$$\int_0^1 t + 4t^4 + 4t^7 \, dt$$

$$\frac{1}{2} t^2 + \frac{4}{5} t^5 + \frac{4}{8} t^8 \Big|_0^1$$

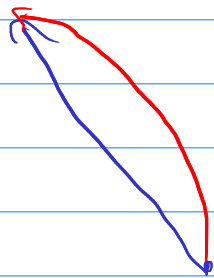
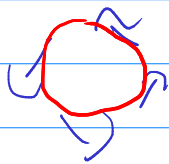
$$\frac{1}{2} + 0.8 + \frac{1}{2}$$

$$1.8$$

$$\langle t, t^3 \rangle$$

$$\vec{F} = \langle x^2 y, \sin(xy) \rangle$$

$$\langle \cos(t), \sin(t) \rangle$$



$$t: 0, 1$$

$$\langle 1-t, t \rangle$$

$$\langle \cos(t), \sin(t) \rangle$$

$$t: 0 \rightarrow \frac{\pi}{2}$$

p_1 - - -

p_k

2, 3, 5