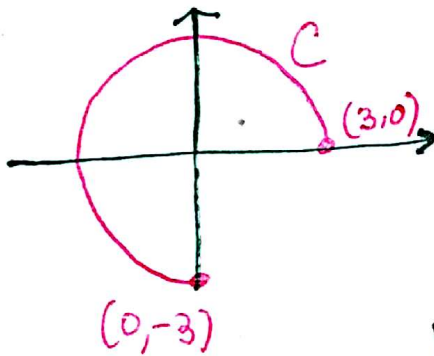


§ 10.8 Arc Length (Skip Curvature)

Ex) Use the arc length formula to compute the length of the curve C , the part of the circle $x^2 + y^2 = 3^2$ in the quadrants I, II, and III



Solution: $\vec{r}(t) = \langle 3\cos t, 3\sin t \rangle$

$$\vec{r}'(t) = \langle -3\sin t, 3\cos t \rangle$$

$$L = \int_{t=0}^{t=3\pi/2} |\vec{r}'(t)| dt = \int_0^{3\pi/2} 3 dt = \frac{9\pi}{2}$$

§ 13.1 Vector Fields

Ex1) Describe the vector field $\vec{F}(x, y) = \hat{i}$ by sketching some of its vectors in the plane

constant vector field. ↓

Point (x, y)	Vector $\vec{F}(x, y)$
$(0, 0)$	$\langle 1, 0 \rangle$
$(1, 0)$	$\langle 1, 0 \rangle$
$(0, 1)$	$\langle 1, 0 \rangle$
$(-2, 0)$	$\langle 1, 0 \rangle$
$(2, 2)$	$\langle 1, 0 \rangle$

