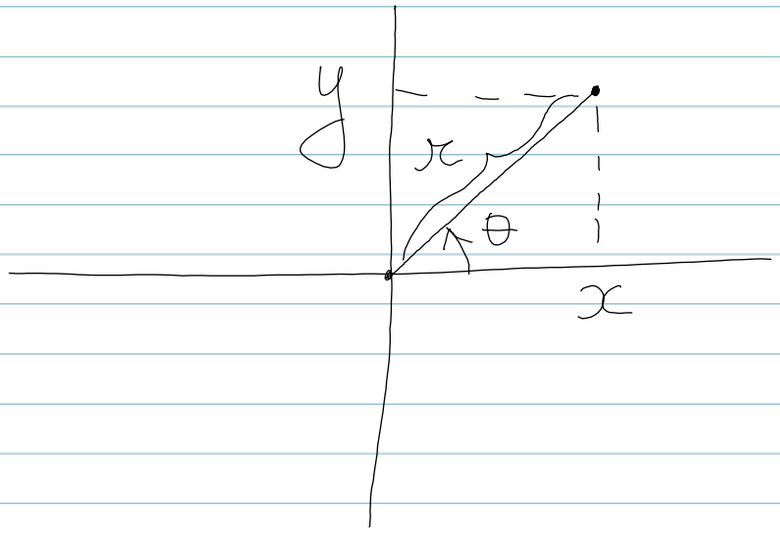
Polar coordinates

$\mathbb{R}^2$

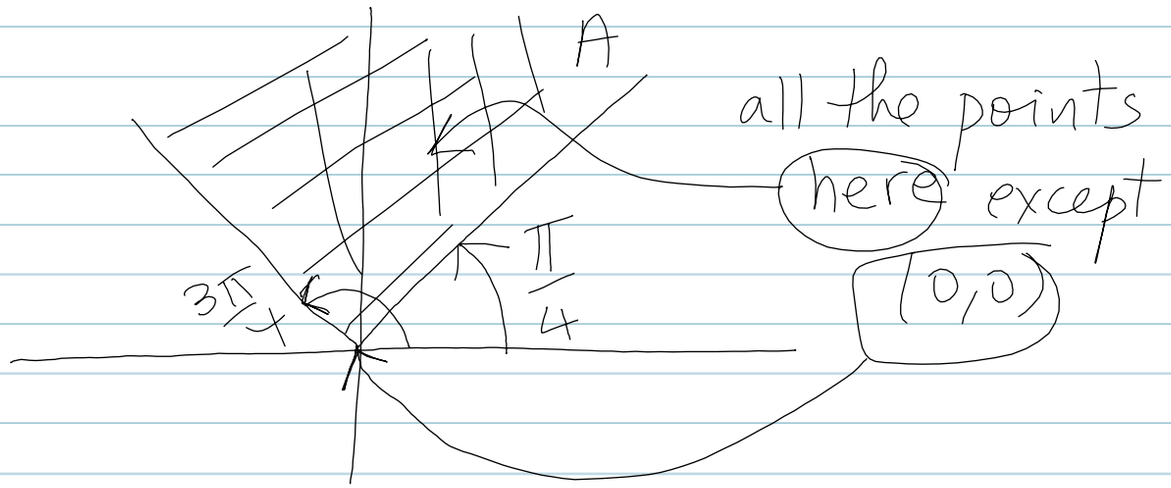


$x = r\cos(\theta)$; $y = r\sin(\theta)$

$r > 0$

$(0,0)$ cannot be written in polar coordinates.

Consider the set A of points such that $\theta \in \left[\frac{\pi}{4}, \frac{3\pi}{4}\right]$. Plot A.



Plot the set B of all points of the plane such that

$\theta \in \left[\pi + \frac{\pi}{4}, \pi + \frac{3\pi}{4}\right]$