

The same point in the plane can have many different "polar addresses".

Example:



P has polar coordinates:

$(2, \pi), (2, -\pi), (-2, 0), (-2, 2\pi),$ etc.

In Cartesian coordinates we represented curves by single equations involving x and y or by pairs of parametric equations.

In Polar coordinates we represent curves by a single equation involving r and θ . It is important to realize that both r and θ are generally changing as the curve is traced out. If $r = f(\theta)$, we call θ the "independent variable" and r as the "dependent" variable. A piece of the curve corresponds to an interval of θ -values; $\alpha < \theta \leq \beta$.