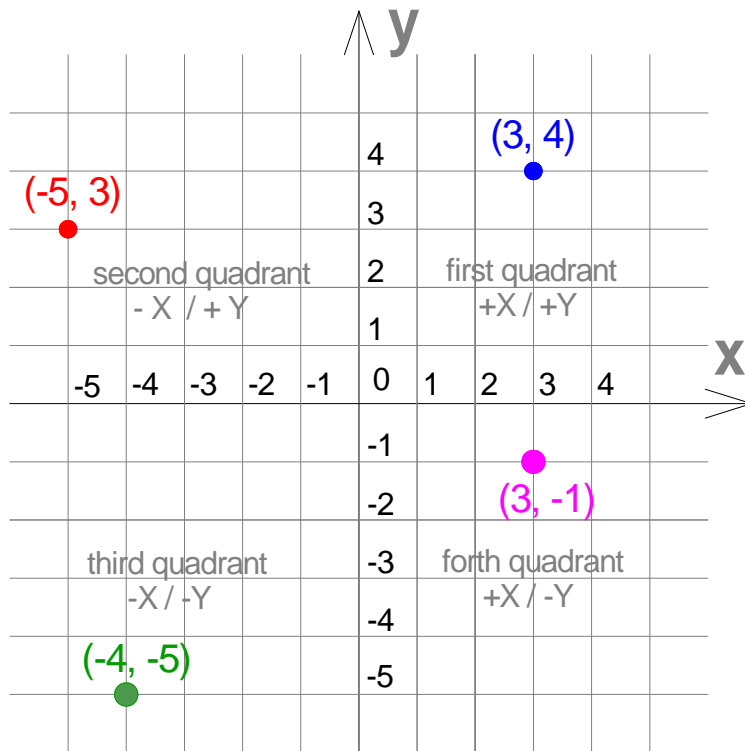# Rectangular & Polar Coordinates

Rectangular coordinates and polar coordinates are two different ways of using two numbers to locate a point on a plane.

Rectangular Coordinates

$(3, 4) = (5, 53.13°)$

$(-5, 3) = (5, 143.13°)$
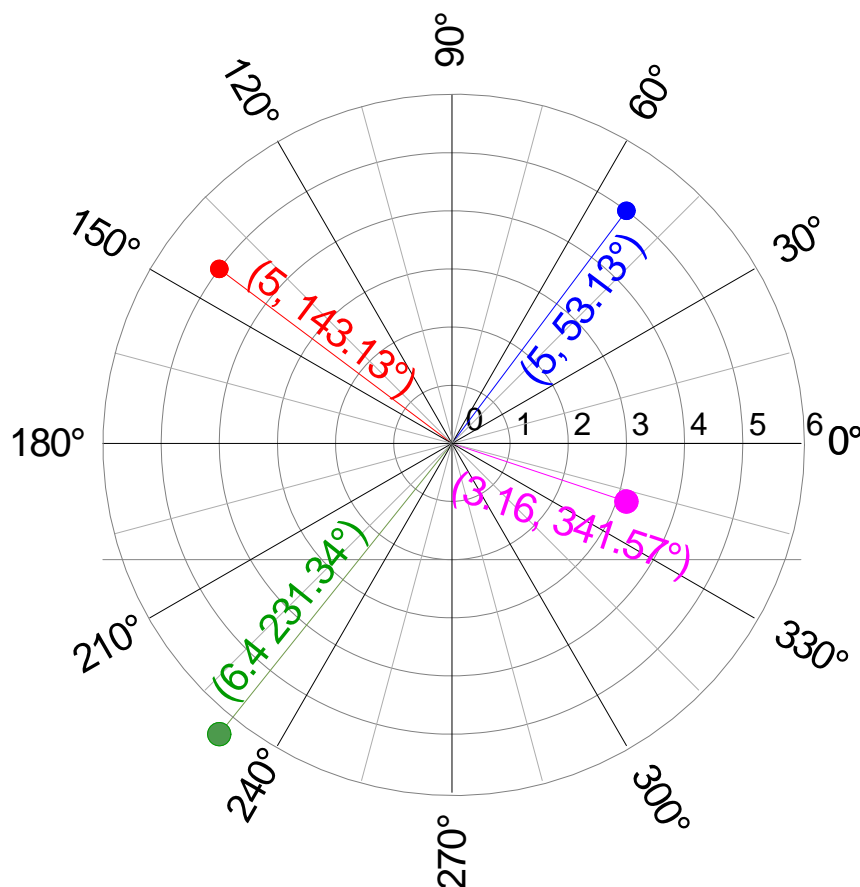
$(-4, -5) = (6.4\ 231.34°)$

$(3, -1) = (3.16, 341.57°)$

The relationships between rectangular coordinates (x,y) and polar coordinates (R, θ), are as follows:

$y = R \sin θ$ and $x = R \cos θ$

$R^2 = x^2 + y^2$ and $\tan θ = y/x$

Rectangular & Polar Coordinate
R = 5, θ = 53.13°

Polar Coordinates

Rectangular Coordinate

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