convert Cartesian coordinates (X,Y)

to

0 to 360 degrees

NOTE! ATAN2() as used herein is the standard definition[1]. Some software, notably Microsoft Excel, reverses the order of the arguments.

counterclockwise from +X axis:	(180/pi)*ATAN2(-Y,-X) + 180
counterclockwise from -X axis:	(180/pi)*ATAN2(Y, X) + 180
counterclockwise from +Y axis:	(180/pi)*ATAN2(X,-Y) + 180
counterclockwise from -Y axis:	(180/pi)*ATAN2(-X, Y) + 180
clockwise from +X axis:	(180/pi)*ATAN2(Y,-X) + 180
clockwise from -X axis:	(180/pi)*ATAN2(-Y, X) + 180
clockwise from +Y axis:	(180/pi)*ATAN2(-X,-Y) + 180
clockwise from -Y axis:	(180/pi)*ATAN2(X, Y) + 180

[1] http://en.wikipedia.org/wiki/Atan2#Definition

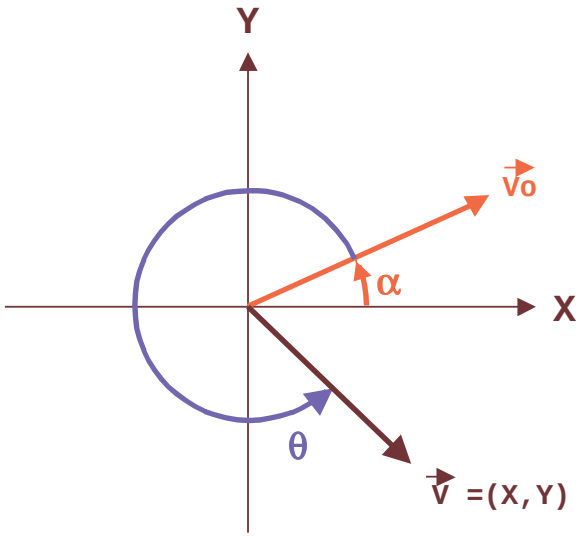
The following diagram shows the general case for angles measured clockwise or counterclockwise from an arbitrary initial ray Vo:

4/26/2011 Ether

θ **counterclockwise**

from $\vec{V}o$ **to** $\vec{V}$

0 to 360 degrees



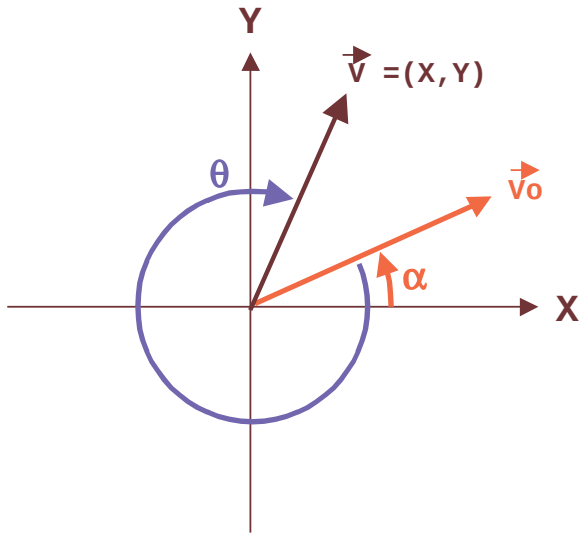
$\theta = (180/\pi)(ATAN2(Y,X) - \alpha)$

θ -= 360*floor(θ/360)[1]

θ **clockwise**

from $\vec{V}o$ **to** $\vec{V}$

0 to 360 degrees



$\theta = (180/\pi)(ATAN2(-Y,X) + \alpha)$

θ -= 360*floor(θ/360)[1]

[1] if α is in [0,360] you can use this instead: if(θ<0) θ += 360