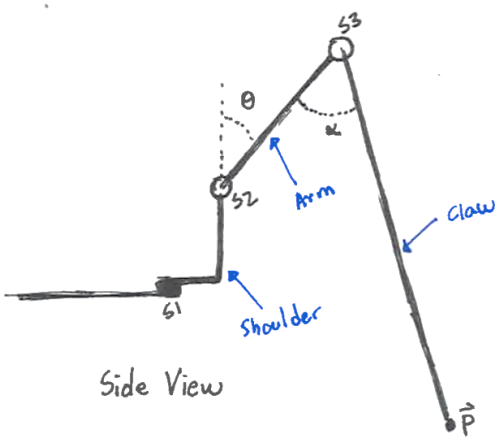
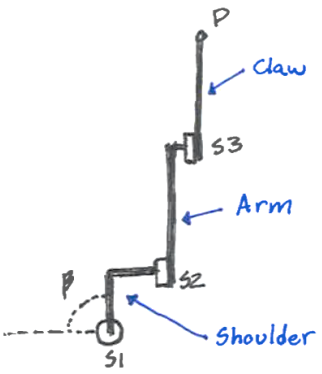
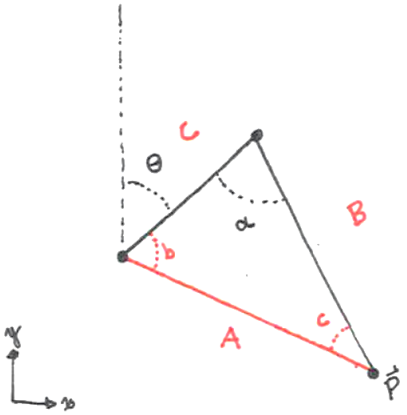


Side View



Top View



inputs x, y

$\vec{P} = [x, y]$

$A = |\vec{P}|$

$A^2 = B^2 + C^2 - 2BC\cos(\alpha)$

solve for α

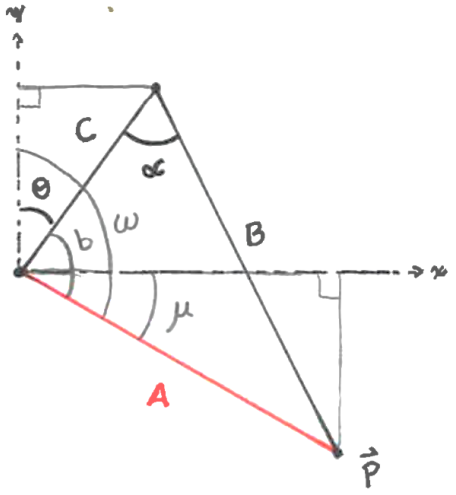
$$\alpha = \cos^{-1}\left[\frac{B^2 + C^2 - A^2}{2BC}\right]$$

where B, and C are known

and $A = |\vec{P}|$

$|\vec{P}| = \sqrt{x^2 + y^2}$

$$\alpha = \cos^{-1}\left[\frac{B^2 + C^2 - (x^2 + y^2)}{2BC}\right]$$



$\mu = \tan^{-1}(y/x)$

$$\frac{\sin(b)}{B} = \frac{\sin(\alpha)}{A}$$

$$b = \sin^{-1}\left[\frac{\sin(\alpha)\cdot B}{\sqrt{x^2 + y^2}}\right]$$

Based on quadrent

I: $\omega = 90 - \mu$

IV: $\omega = 90 + \mu$

III: $\omega = 180 + \mu$

$\theta = \omega - b$