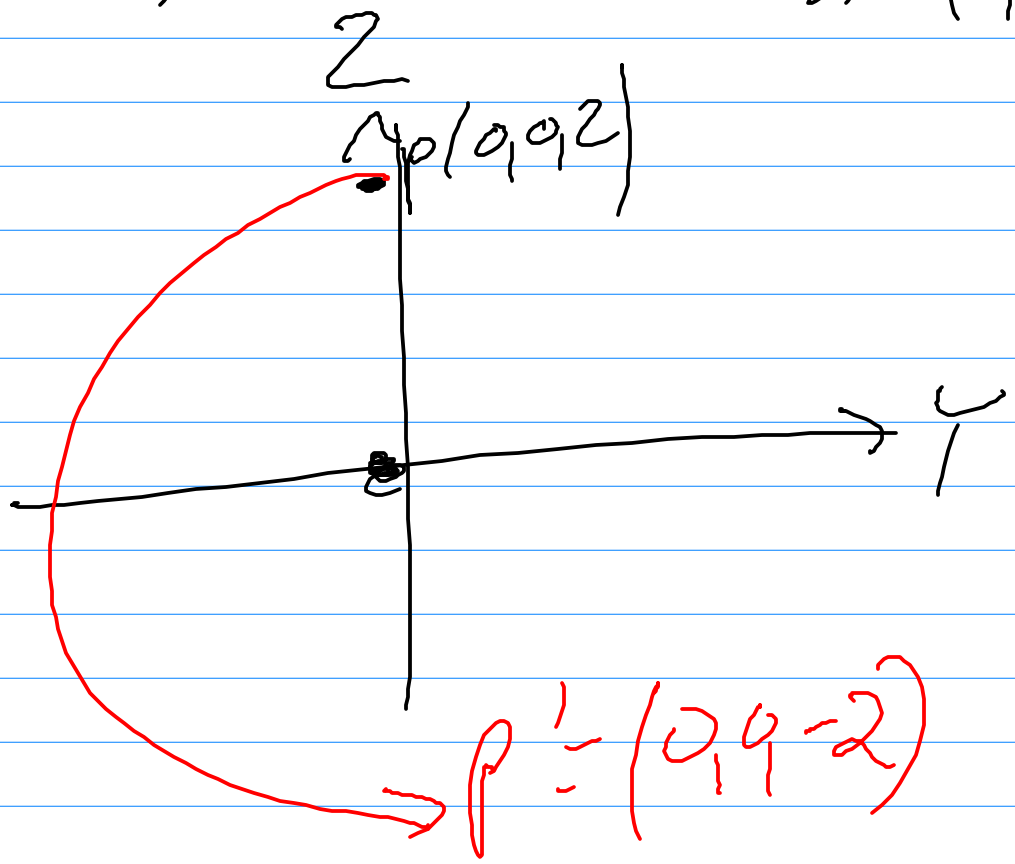
$p = (0,0,2)$ $\theta = 180^\circ$ $A = (1,0,0)$



$\rightarrow p' = (0,0,-2)$

$\theta = 360^\circ$ $A = (1,0,0)$

NOTHING CHANGES

$360^\circ \equiv 0^\circ$

$q = \cos\frac{\theta}{2} + \sin\frac{\theta}{2}(a_x i + a_y j + a_z k)$

$\frac{360}{2} = 180$ $\quad \sin 180 = 0$