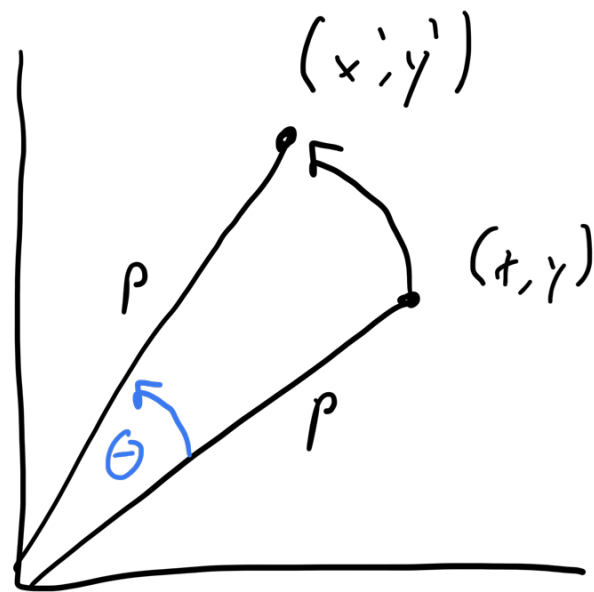
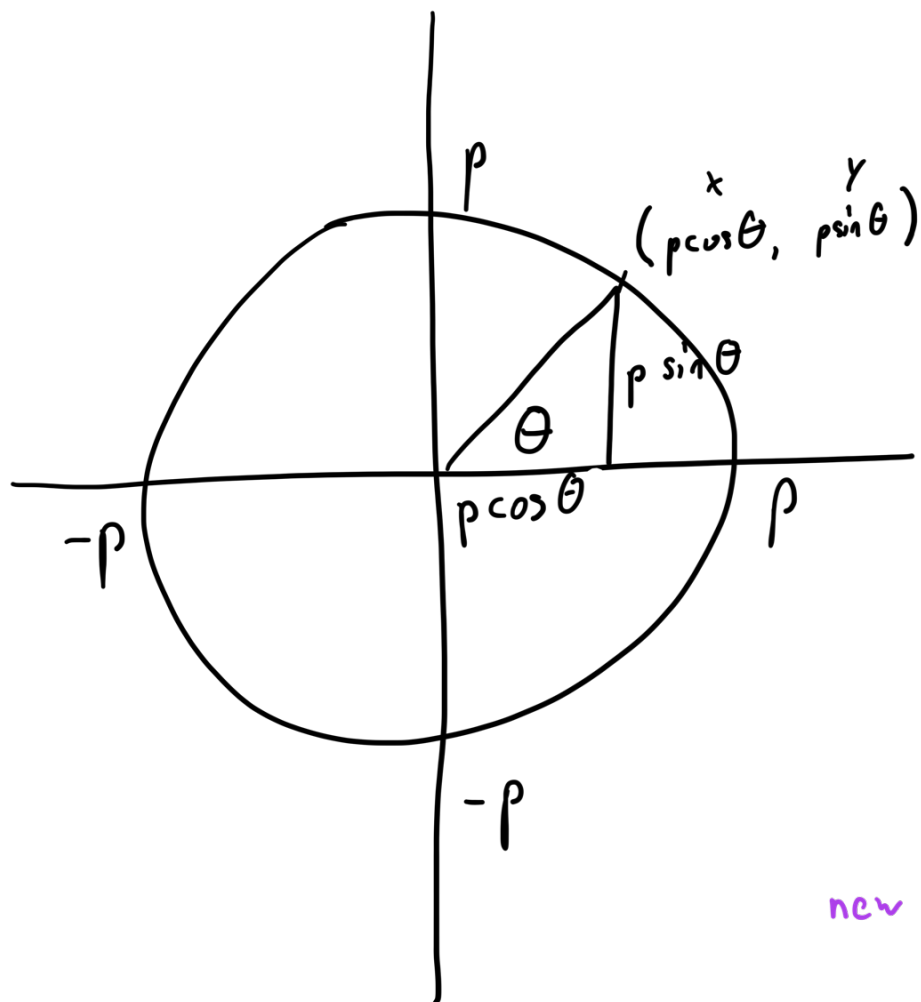


Rotation



Standard Rotation

new horizontal $\rightarrow x' = x \cos \theta + y \sin \theta$

new vertical $\rightarrow y' = y \cos \theta - x \sin \theta$

old horizontal part that stays horizontal

old vertical part that stays vertical

old vertical part that affects the horizontal direction

old horizontal part that affects the vertical

- Intuition: the old vertical & horizontal components are "mixed" together to give us the new ones.

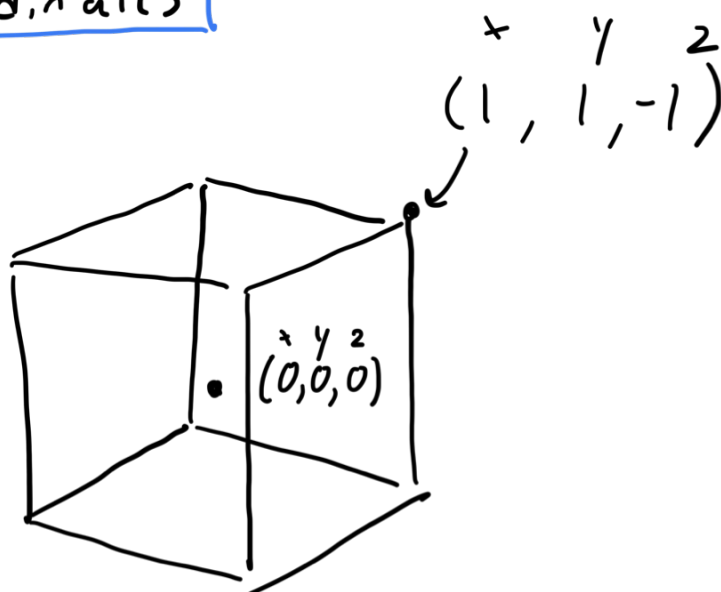
Consider $x \dots$

The amount by which we "retract" x needs to be added back to both the horizontal & vertical parts

If we don't, then the new point wouldn't be distance p from the circle center!

as we retract, we have to "push up" so the new point isn't inside the circle!

Cube coordinates



- Interpolation - getting the points between two endpoints

(x, y)

(x', y')