Angle of movement:

the angle of movement depending on inverse kinematics, I assumed that we want to move robot's leg to the point: (57.55, 28) on the cartesian coordinate system. The the value of x is 57.55 and the value of y is 28. As given to us that the length of the robot leg is 64 cm, now we have three values that represent the side lengths of a right-angled traingle. Depending on the trigonometric functions of right-angled traingle we can find the angle of the movement by using the following formula:

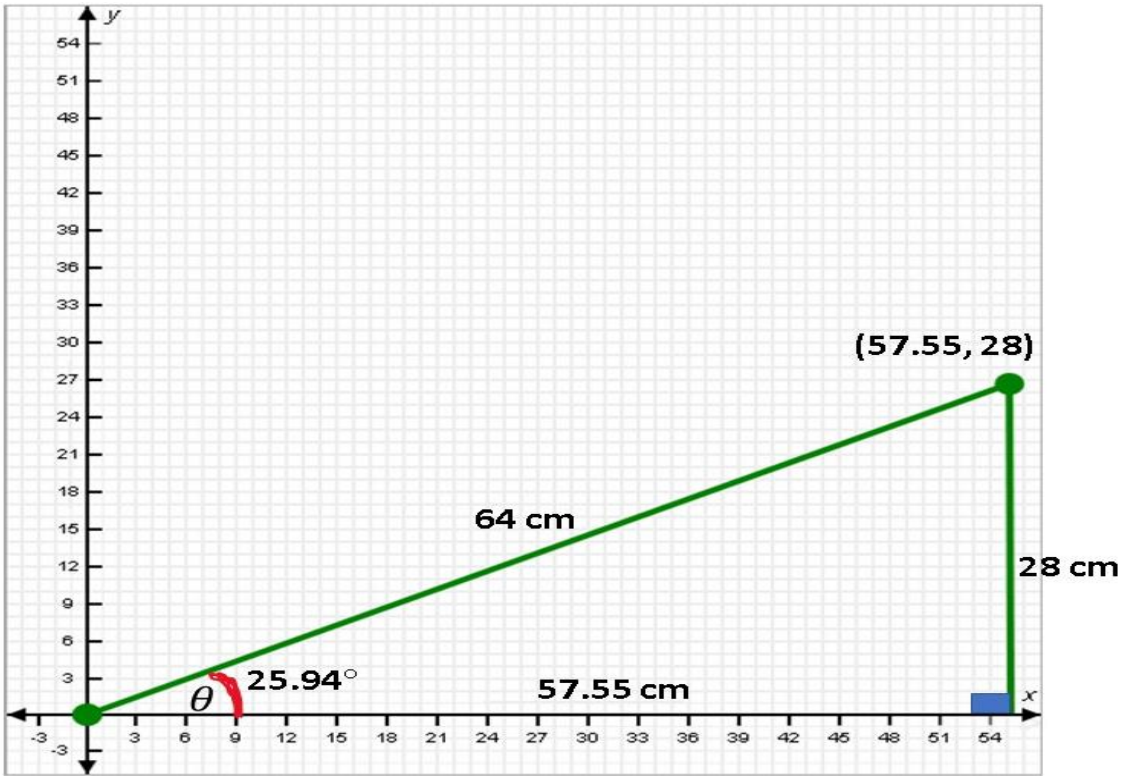
sin θ = opposite side/ hypotenuse

sin θ = 28/64

θ = arcsin(28/64)

θ = 25.94

representation of points on the Cartesian coordinate system.

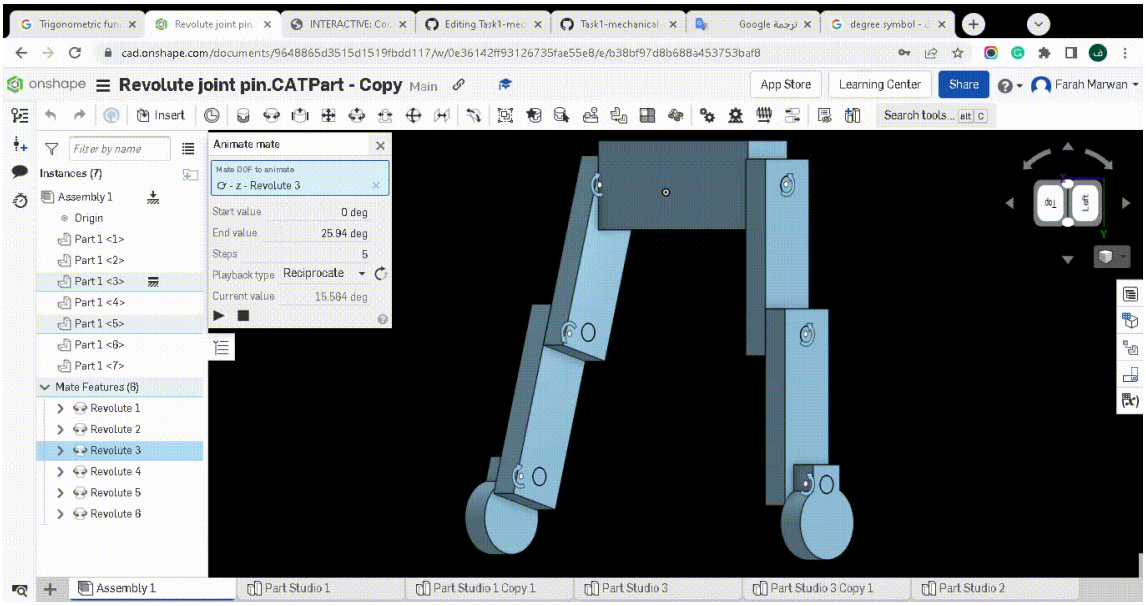


Animate robot leg:

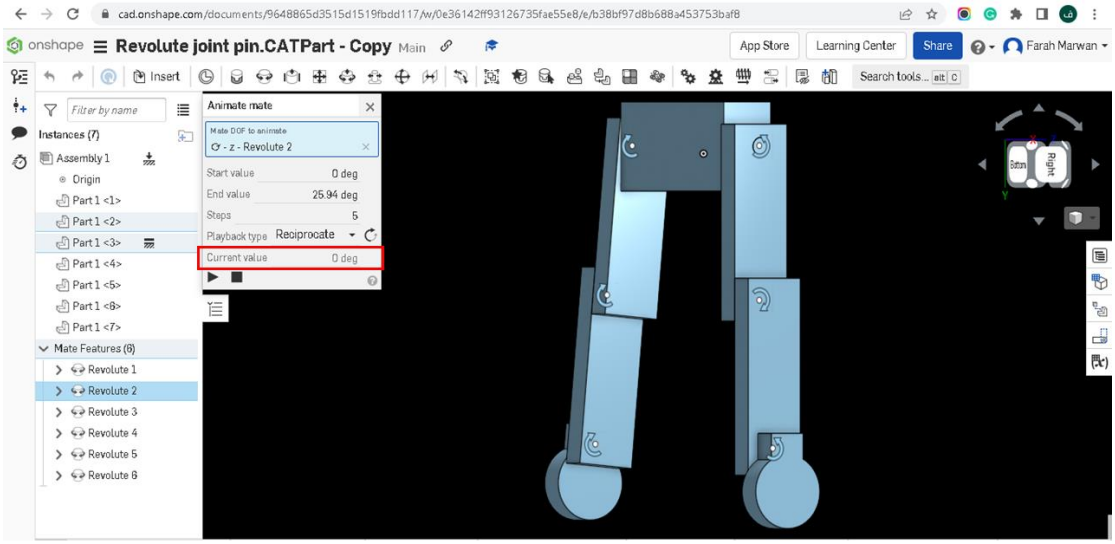
3D design for robot legs.

https://cad.onshape.com/documents/9648865d3515d1519fbdd117/w/0e36142ff93126735fae55e8/e/e9efa5639bf8b6ff610eaf11

the animation of the leg.



the robot leg when the angle is 0 " pefore movement"



the robot leg when the angle is 24.95 "after movement"