Angle of movement

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

القانون حساب زاوية حركة القدم

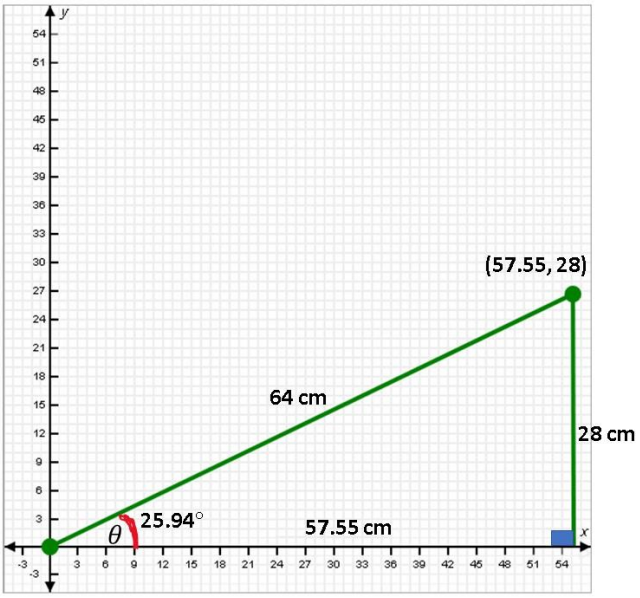
الزاوية = Sin (x) * الارتفاع

sin θ = 28/64

θ = arcsin (٢٨/٦٤)

θ = 25.94°

Click here to see the representation of points on the Cartesian coordinate system



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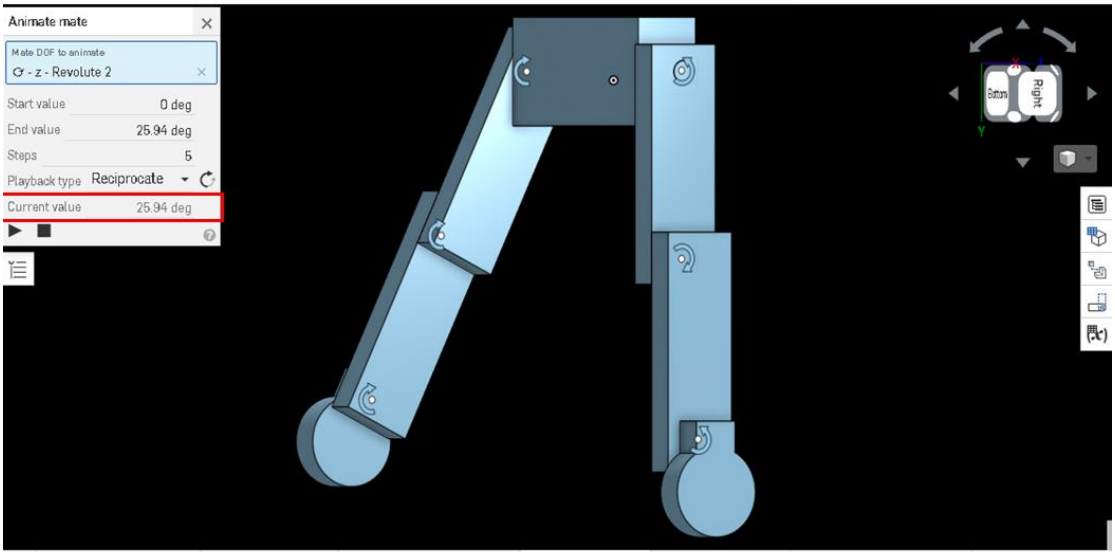
Animate robot leg

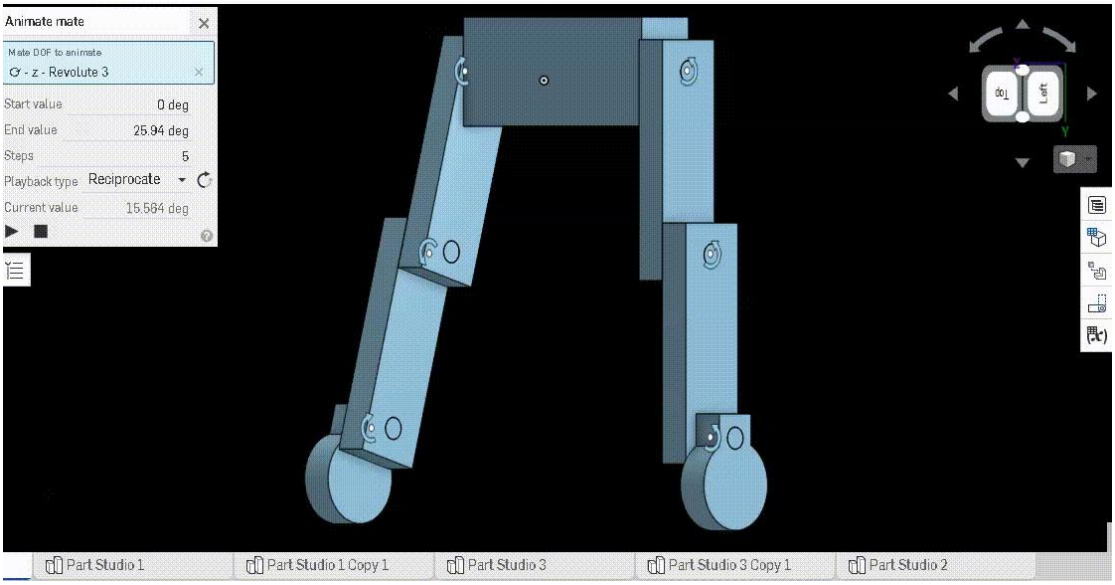
.my 3D design for robot legs

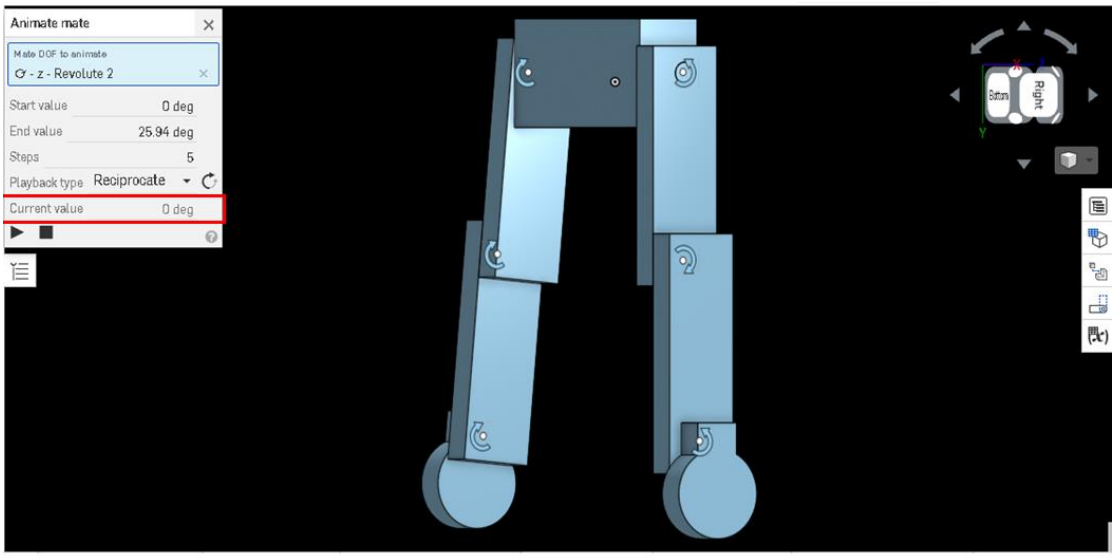
.the animation of the leg

the robot leg when the angle is 0

the robot leg when the angle is 24.95

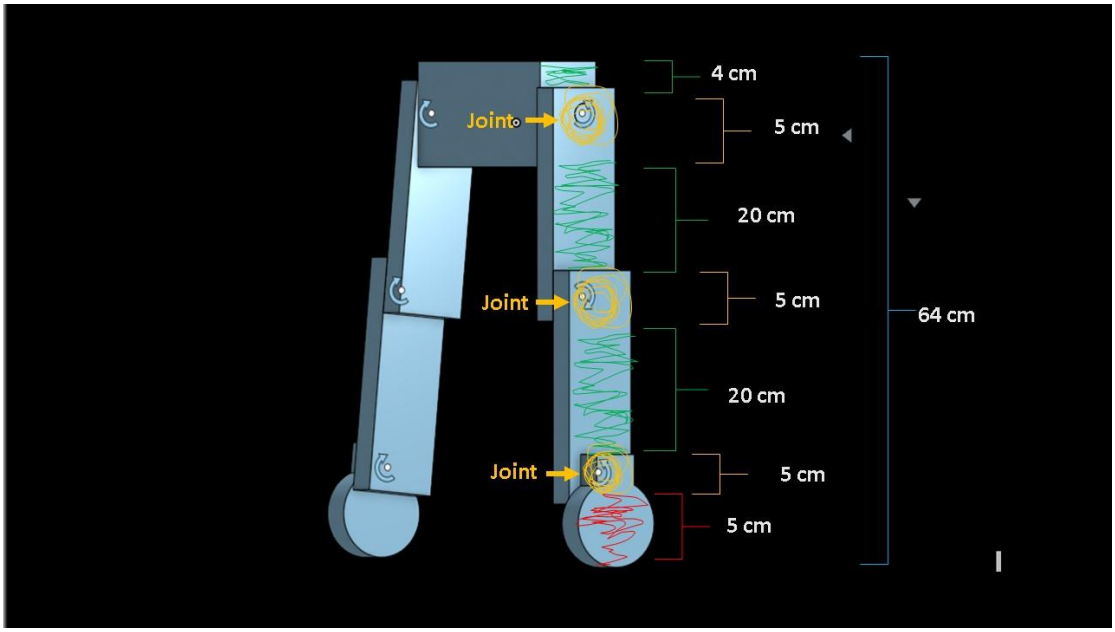






Parts lengths

suggestion for parts lengths of the robot leg



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