**Angle of movement**

I found 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°

**Click**[**here**](https://github.com/farahhrs/Task1-mechanical-engineering/blob/main/Movement%20angle.jpg)**to see the representation of points on the Cartesian coordinate system.**

## Animate robot leg

* Click [here](https://cad.onshape.com/documents/9648865d3515d1519fbdd117/w/0e36142ff93126735fae55e8/e/e9efa5639bf8b6ff610eaf11?renderMode=0&uiState=62d1e499bef4ec472d1a1db6) to access my 3D design for robot legs.
* Click [here](https://github.com/farahhrs/Task1-mechanical-engineering/blob/main/Movement%20animation.gif) to see the animation of the leg.
* Click [here](https://github.com/farahhrs/Task1-mechanical-engineering/blob/main/Before%20movement.png) to see the robot leg when the angle is 0
* Click [here](https://github.com/farahhrs/Task1-mechanical-engineering/blob/main/After%20movement.png) to see the robot leg when the angle is 24.95

## Parts lengths

Click [here](https://github.com/farahhrs/Task1-mechanical-engineering/blob/main/Parts%20lengths%20.jpg) to see my suggestion for parts lengths of the robot leg.