**Antenna**

To determine the location of the satellite from the POI, we kept a track of the orientation angle of the robot, along with its position on the arena map, which we chose to divide into 425 x 320 cells. Depending on its relative distance from the antenna and the direction the robot is facing, an angle is computed which would cause the robot to turn at the minimum possible angle, either left or right, in order to correct its orientation to face the antenna.

Using this methodology, we tested the error rate for antenna location from three different POI and determined upon the maximum error rate of 8.41 angle. Which mainly was the result of friction generated between the tires of the robot and the uneven surface of the POI plaster.

The following table indicates the calculated and measured angles from different POI locations. In the values for the calculated angle, the negative sign indicates that the robot should rotate left from its current orientation in order to point towards the antenna at a minimum angle and similarly, the positive sign of the calculated angle is indicative of the right-side rotation of the robot.

