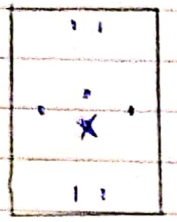
Measurements

14/08/23

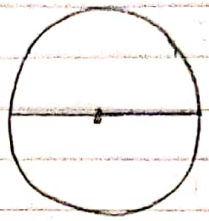
Brief

We need to take some measurements on the robot to calculate correction angle.



We need:

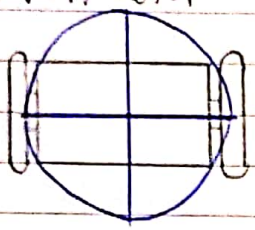
Wheel Diameter



= 64.8mm d

32.4mm r

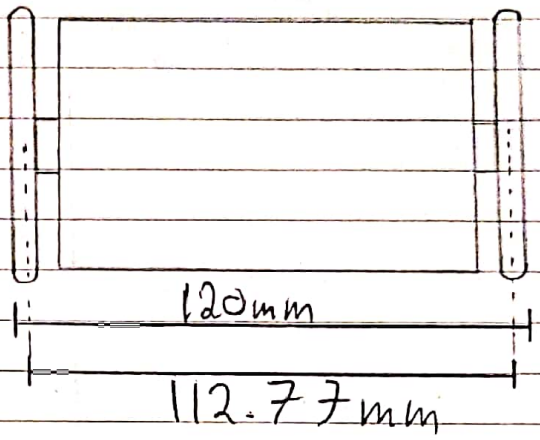
Pivot Perimeter



$P = \pi d = \pi \cdot 112.77\,mm$

$P = 354.277\,mm$

Width Between Wheels



Pulses per rotation: $3 \times 19 \times 4 = 228$

Wheel perimeter: $\pi \cdot 64.8 = 203.57\,mm$

∴ every 228 pulses on 4x accuracy, ie. 1 revolution, 203.57mm is traversed.

To traverse 1° of perimeter:

100° ~ 360° => 354.277/203.57 = 1.74 rev = 396.79 pulse
50° ~ 180° => 177.1385/203.57 = 0.87 rev. = 198.39 pulse
25° ~ 90° => 88.569/203.57 = 0.435 rev = 99.148 pulse