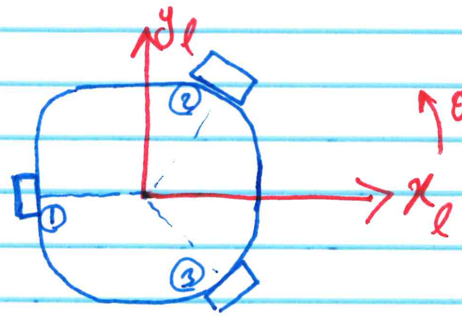
Consider the robot shown below



The kinematic relationship for this robot in the local coordinate frame can be written as

$$\begin{bmatrix} \dot{x} \\ \dot{y} \\ \dot{\theta} \end{bmatrix} = \begin{bmatrix} \frac{1}{\sqrt{3}} & 0 & -\frac{1}{\sqrt{3}} \\ -\frac{1}{3} & \frac{2}{3} & -\frac{1}{3} \\ -\frac{1}{3l} & -\frac{1}{3l} & -\frac{1}{3l} \end{bmatrix} \begin{bmatrix} v_2 \\ v_1 \\ v_3 \end{bmatrix}$$

v: linear velocity of wheels [m/s]

$$= \frac{60r}{2\pi} \underbrace{\begin{bmatrix} 1/\sqrt{3} & 0 & -1/\sqrt{3} \\ -1/3 & 2/3 & -1/3 \\ -1/3l & -1/3l & -1/3l \end{bmatrix}}_{M} \begin{bmatrix} rpm_2 \\ rpm_1 \\ rpm_3 \end{bmatrix}$$

For our robot
$r = 3$ cm
$l = 19$ cm

By taking the inverse of the matrix M above, we get

$rpm_2 = 3.023\dot{x} - 1.7453\dot{y} - 0.6632\dot{\theta}$

$rpm_1 = 3.4907\dot{y} - 0.6632\dot{\theta}$

$rpm_3 = -3.0230\dot{x} - 1.7453\dot{y} - 0.6632\dot{\theta}$

By choosing any desired velocity in the x-direction ($\dot{x}$), in the y direction ($\dot{y}$) or the angular rate of change ($\dot{\theta}$), you can calculate the required motor inputs.