HW #9 – My Solution

- Found motion profile solution in Cartesian coordinates $x_0, z_0$

\[ A_{\text{max}} \]

- Found inverse kinematic solution in joint coordinates $d_1, \theta_2$ for each $x_0, z_0$

\[ V_{\text{max}} = \frac{1}{4} A_{\text{max}} T, \quad S_{\text{max}} = \frac{1}{8} A_{\text{max}} T^2 \]

\[ \text{Time, sec} \]

\[ \text{Acceleration, A} \]

\[ A_{\text{max}} \]

\[ \text{Displacement x} - \text{All 4 straight lines} \]

\[ \text{Displacement x} \]

\[ \text{Displacement, inch} \]

\[ \text{Time, sec} \]

\[ \text{Displacement, inch} \]

\[ \text{Joint 1 - Acceleration} \]

\[ \text{Acceleration a} - \text{All 4 straight lines} \]

\[ \text{Acceleration, in/sec}^2 \]

\[ \text{Time, sec} \]
Joint 2 - Displacement

Displacement $\theta_2$ - All 4 straight lines

Displacement, radians

Time, sec

Joint 1 - Displacement

Displacement $d_1$ - All 4 straight lines

Displacement, in

Time, sec

Joint 1 - Velocity

Velocity $v_1$ - All 4 straight lines

Velocity, in/sec

Time, sec

HW #9 – Practical Solution

- Found motion profile solution in Cartesian coordinates $x_0, z_0$ - 0.125 sec increments

$A_{max}$

Acceleration, $A$

$V_{max} = \frac{1}{2} A_{max} T$, $S_{max} = \frac{1}{8} A_{max} T^2$

- Found inverse kinematic solution in joint coordinates $d_1, \theta_2$ for each $x_0, z_0$

- Linearly interpolate during each 0.125 time increment