1. Find a closed-form solution (including multiple solutions) for the inverse kinematics of the Adept Cobra s800 SCARA for which dimensions were given in a handout and DH frames provided in class. Also, test your inverse kinematics solution(s) on the following cases and provide resulting numerical values for $\vec{q} = [\theta_1, \theta_2, d_3, \theta_4]^T$:

(a) $T_e = \begin{bmatrix} 1 & 0 & 0 & 500 \\ 0 & -1 & 0 & -500 \\ 0 & 0 & -1 & 300 \\ 0 & 0 & 0 & 1 \end{bmatrix}$

(b) $T_e = \begin{bmatrix} \frac{1}{2} & \frac{\sqrt{3}}{2} & 0 & -250 \\ \frac{\sqrt{3}}{2} & -\frac{1}{2} & 0 & 500 \\ 0 & 0 & -1 & 200 \\ 0 & 0 & 0 & 1 \end{bmatrix}$

2. Find a closed-form solution (including multiple solutions) for the inverse kinematics of the Standford Arm for which dimensions and DH frames were provided in a handout. Also, test your inverse kinematics solution(s) on the following cases and provide resulting numerical values for $\vec{q} = [\theta_1, \theta_2, d_3, \theta_4, \theta_5, \theta_6]^T$:

(a) $T_e = \begin{bmatrix} 0 & 0 & 1 & 2 \\ 0 & 1 & 0 & -2 \\ -1 & 0 & 0 & 5 \\ 0 & 0 & 0 & 1 \end{bmatrix}$

(b) $T_e = \begin{bmatrix} \frac{1}{2} & \frac{\sqrt{3}}{2} & 0 & -2 \\ \frac{\sqrt{3}}{2} & -\frac{1}{2} & 0 & 2 \\ 0 & 0 & -1 & 1 \\ 0 & 0 & 0 & 1 \end{bmatrix}$