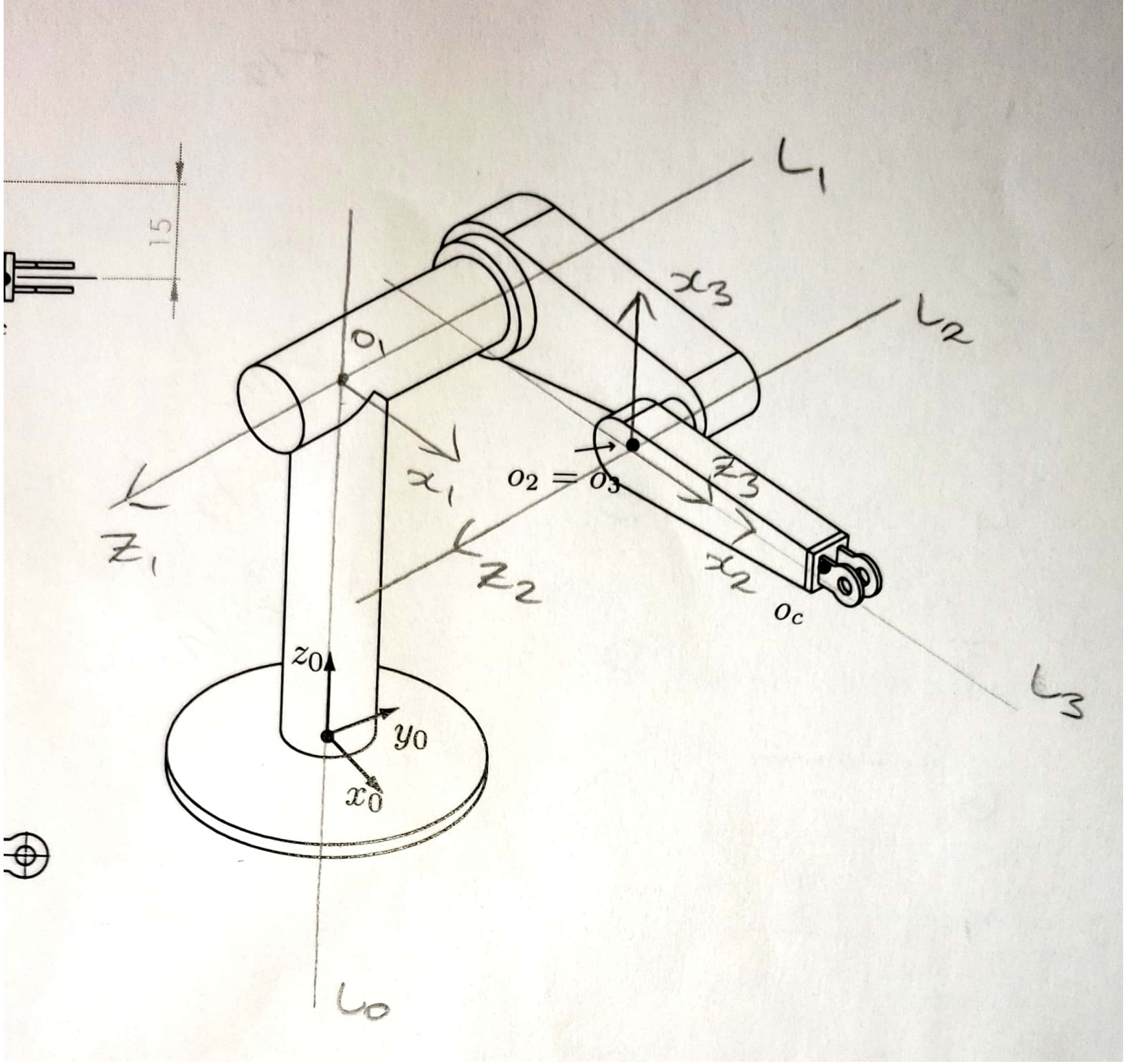
15
L_1
L_2
L_3
L_0
o_1
x_3
x_1
z_1
$o_2 = o_3$
z_3
z_2
x_2
o_c
z_0
y_0
x_0

Link	a_i / cm	α_i / radians	d_i / cm	θ_i / radians
1	0	$\pi/2$	76	θ_1
2	43.23	0	-23.65	θ_2
3	0	$\pi/2$	0	θ_3
4	0	$-\pi/2$	43.18	θ_4
5	0	$\pi/2$	0	θ_5
6	0	0	20	θ_6

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$$\theta_1 = \operatorname{atan2}(y_c, x_c) - \operatorname{atan2}(-d_2, \sqrt{x_c^2 + y_c^2 - d_2^2})$$

$$\theta_3 = \operatorname{atan2}(D, \pm\sqrt{1 - D^2})$$

where $$D = \frac{x_c^2 + y_c^2 - d_2^2 + (z_c - d_1)^2 - a_2^2 - d_4^2}{2 \cdot a_2 \cdot d_4}$$

$$\theta_2 = \operatorname{atan2}(z_c - d_1, \sqrt{x_c^2 + y_c^2 - d_2^2}) - \operatorname{atan2}(-d_4 \cdot \cos\theta_3, a_2 + d_4 \cdot \sin\theta_3)$$

Consider $$R_6^3 = \begin{bmatrix} * & * & c_4 \cdot s_5 \\ * & * & s_4 \cdot s_5 \\ -s_5 \cdot c_6 & s_5 \cdot s_6 & c_5 \end{bmatrix} \equiv M$$

$$\theta_4 = \operatorname{atan2}(M_{23}, M_{13}) \quad \text{or} \quad \theta_4 = \operatorname{atan2}(-M_{23}, -M_{13})$$

$$\theta_5 = \operatorname{atan2}(\sqrt{1 - M_{33}^2}, M_{33}) \quad \text{or} \quad \theta_5 = \operatorname{atan2}(-\sqrt{1 - M_{33}^2}, M_{33})$$

$$\theta_6 = \operatorname{atan2}(M_{32}, -M_{13}) \quad \text{or} \quad \theta_6 = \operatorname{atan}(-M_{32}, -M_{31})$$

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