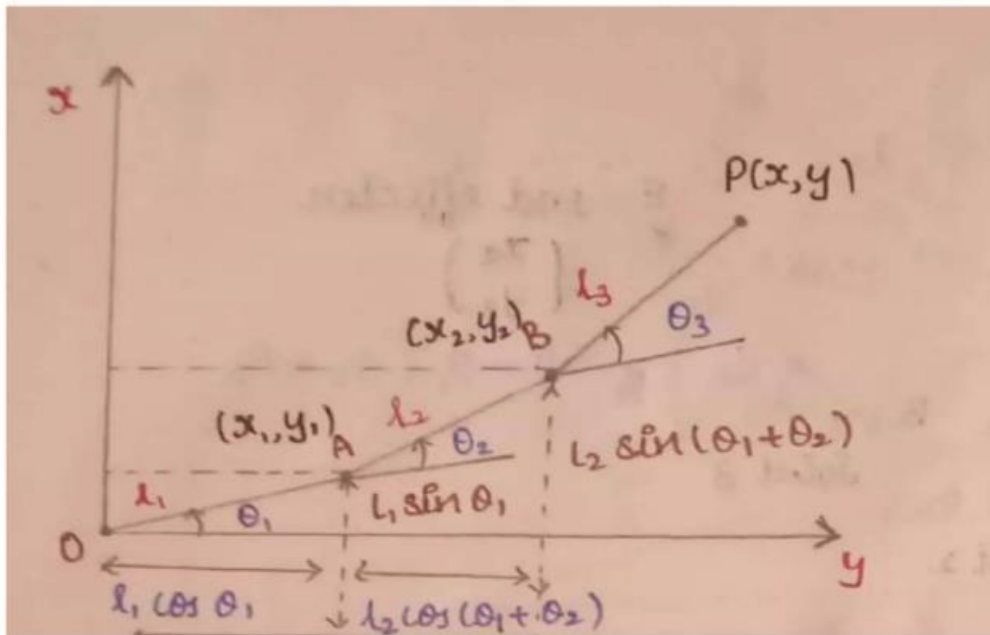
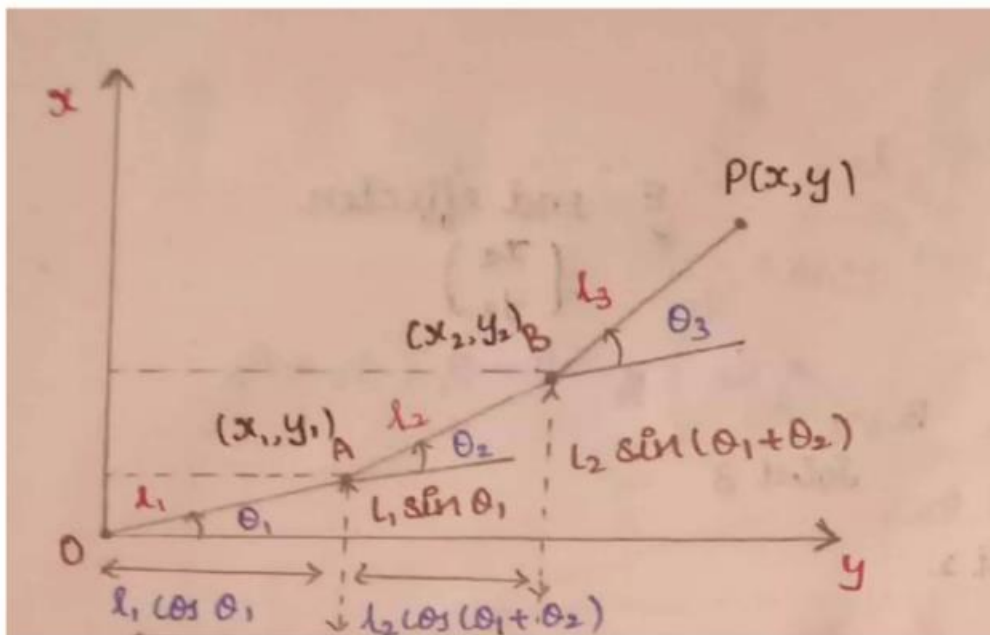


INVERSE KINEMATICS FOR 3 DEGREE OF FREEDOM WITH 2 DIMENSIONS



INVERSE KINEMATICS FOR 3 DEGREE OF FREEDOM WITH 2 DIMENSIONS



By solving eqn ① & ②

$$\sin \theta_1 = \frac{(l_1 + l_2 \cos \theta_2) y_2 - (l_2 \sin \theta_2) x_2}{x_2^2 + y_2^2} \rightarrow \textcircled{A}$$

Similarly

$$\cos \theta_1 = \frac{(l_1 + l_2 \cos \theta_2) x_2 + (l_2 \sin \theta_2) y_2}{x_2^2 + y_2^2} \rightarrow \textcircled{B}$$

Formula: -

$$\tan \theta_1 = \frac{\sin \theta_1}{\cos \theta_1}$$

$\Rightarrow$

$$\theta_1 = \tan^{-1} \left\{ \frac{\sin \theta_1}{\cos \theta_1} \right\}$$