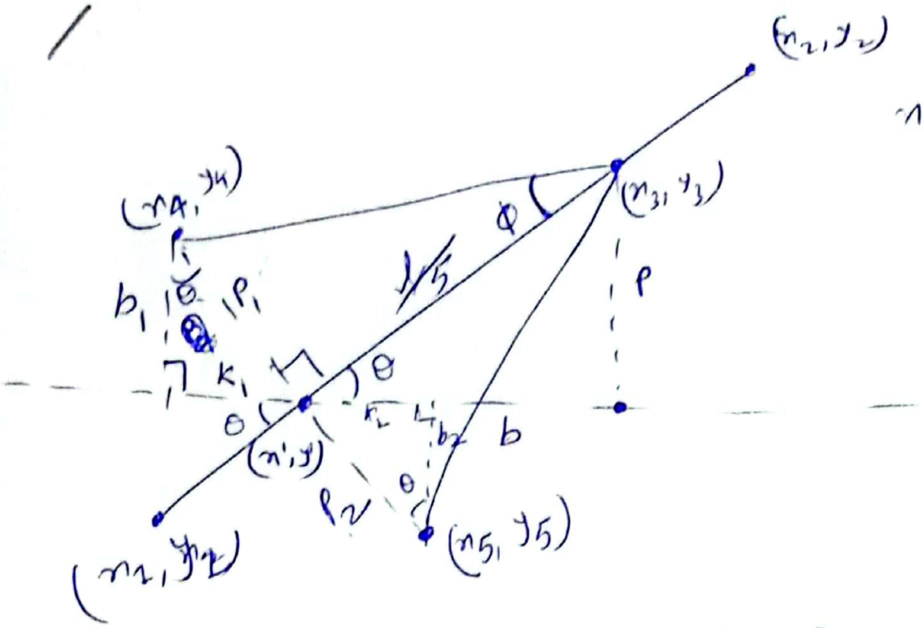


$x_2 > x_1$, $y_2 > y_1$ (1)

$$(x_3, y_3) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right) \quad \text{—— (I)}$$

$$\tan\theta = m = \frac{y_2 - y_1}{x_2 - x_1} \Rightarrow \cancel{\tan\theta} \cdot \theta = \tan^{-1}(m) \quad \text{—— (II)}$$

$$\sin\theta = \frac{p}{(l/5)} = \frac{5p}{l} \Rightarrow p = \frac{l\sin\theta}{5} \quad \text{—— (III)}$$

$$\left.\begin{aligned} y' &= y_3 - p = y_3 - \frac{l\sin\theta}{5} \\ \cos\theta &= \frac{b}{(l/5)} \Rightarrow b = \frac{l\cos\theta}{5} \\ x' &= x_3 - b = x_3 - \frac{l\cos\theta}{5} \end{aligned}\right\} \quad \text{—— (IV)}$$

$$\left.\begin{aligned} \tan\phi &= \frac{p_1}{l/5} = \frac{5p_1}{l} \\ p_1 &= \frac{l\tan\phi}{5} \\ &\cancel{\cos\phi = p_1} \\ \cos\theta &= \frac{b_1}{p_1} \Rightarrow b_1 = p_1 \cos\theta \end{aligned}\right\} \quad \text{(V)}$$

1

$$y_4 = y' + b_1$$

$$\tan\theta = \frac{k_1}{b_1}$$

$$k_1 = b_1 \tan\theta$$

$$\cancel{x_4 = x' - y \tan}$$

$$x_4 = x' - k_1 = x' - b_1 \tan\theta$$

(VI)

$$\cancel{x_5 = x' +}$$

$$\frac{k_2}{k_1} = \frac{b_2}{b_1} = \frac{P_2}{P_1}$$

$$k_2 = \left(\frac{P_2}{P_1}\right) k_1 = k_1$$

$$b_2 = \left(\frac{P_2}{P_1}\right) b_1 = b_1$$

(VII)

$$x_5 = x' + k_2$$

$$y_5 = y' - b_2$$

(VIII)

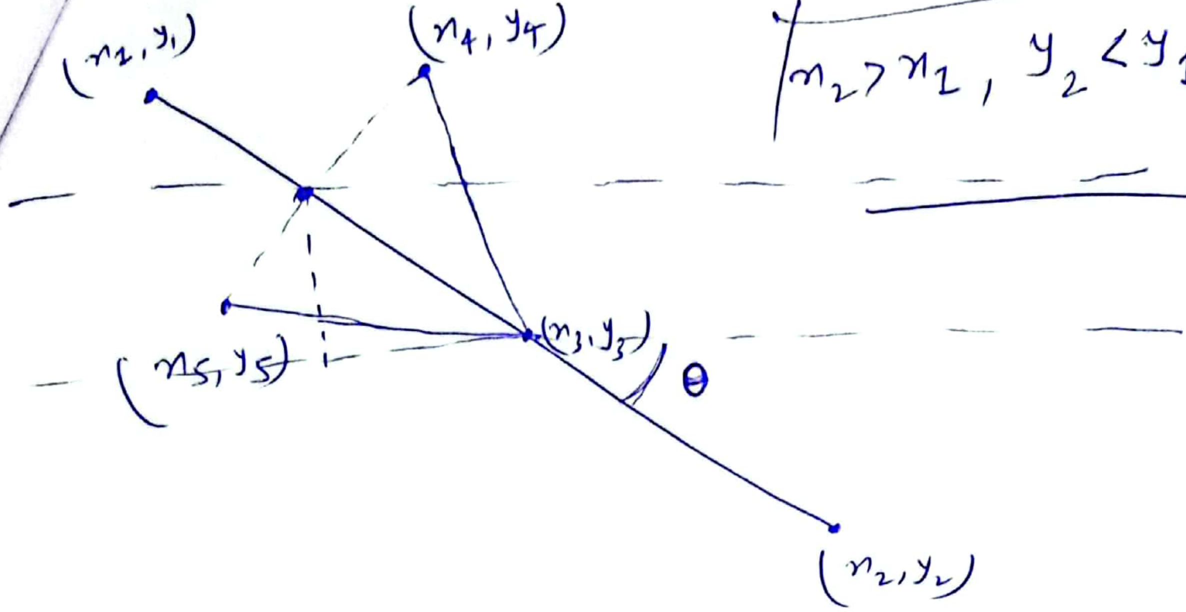
(2) $x_1 < x_2$

$y_1 < y_2$

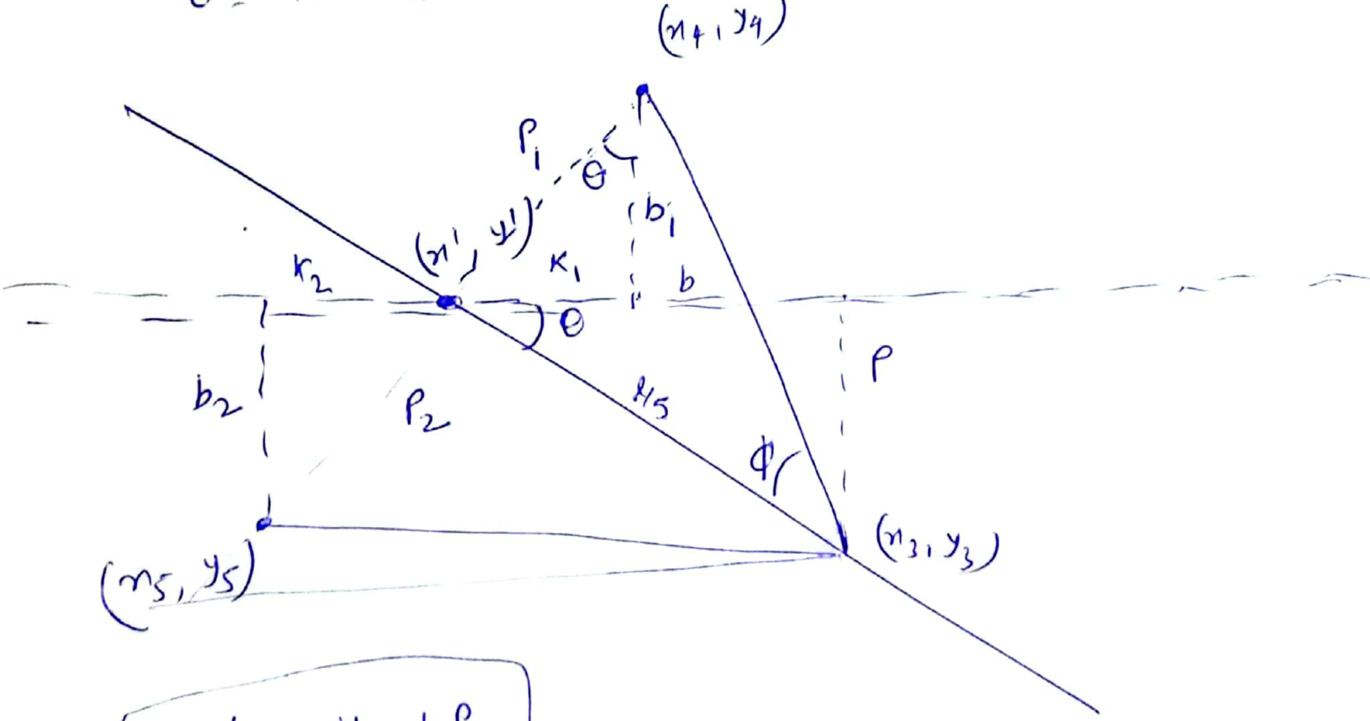
$x' = x_3 - b$	$y' = y_3 - p$
$x_4 = x' - k_1$ $y_4 = y' + b_1$	$x_5 = x' + k_2$ $y_5' = y' - b_2$

$$\boxed{x_2 > x_1,\ y_2 < y_1}$$

2

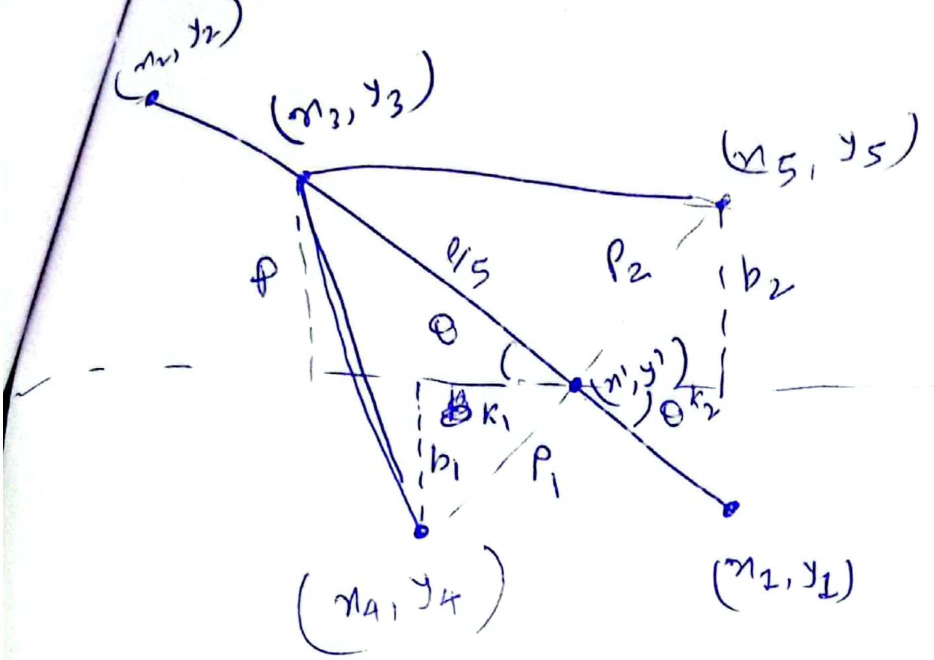


$\theta = \tan^{-1}(m) \rightarrow$ take absolute val.



$y' = y_3 + P$ $x' = x_3 - b$	
$y_4 = y' + b_1$ $x_4 = x' + k_1$	$x_5 = x' - k_2$ $y_5 = y' - b_2$

2 $x_2 > x_1$
$y_2 < y_1$

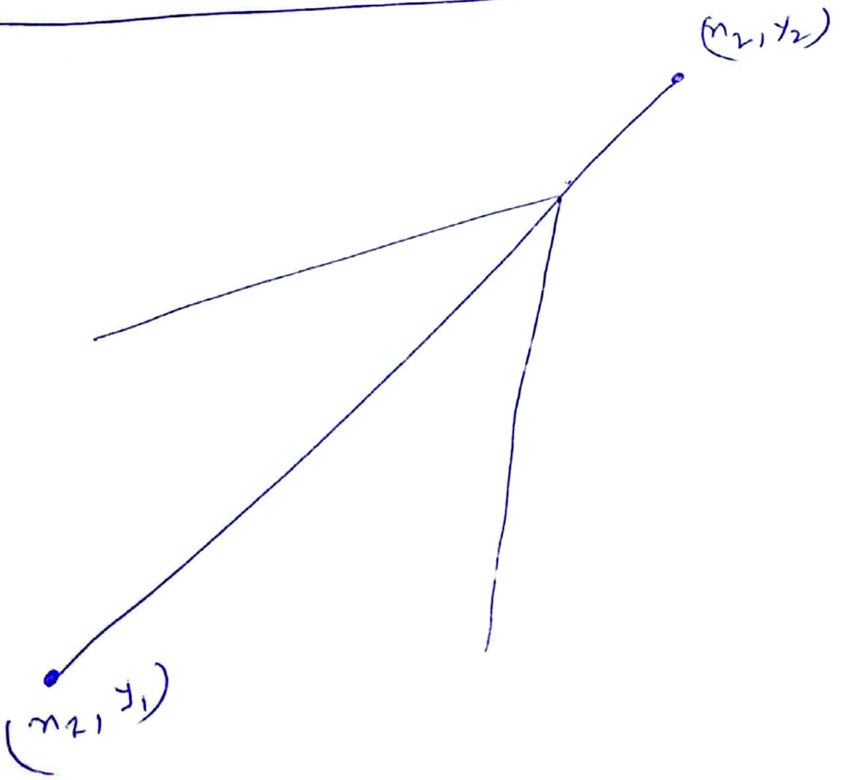


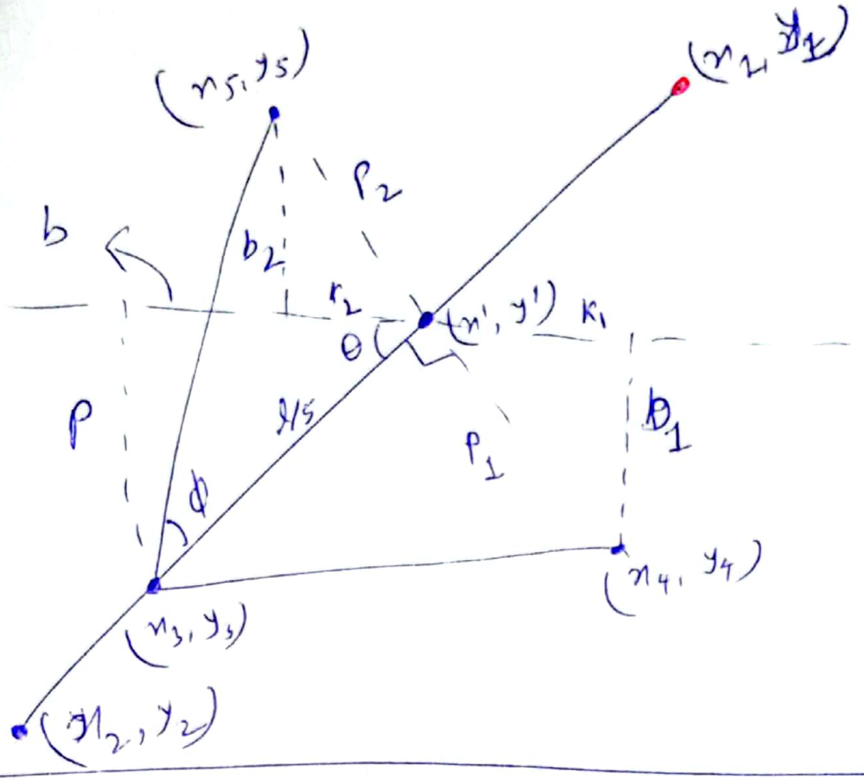
3) $x_2 < x_1$

$y_2 > y_1$

$$\boxed{\begin{array}{ll} x' = x_3 + b & y' = y_3 - P \\ x_4 = x' - k_1 & y_4 = y' - b_1 \\ x_5 = x' + k_2 & y_5 = y' + b_2 \end{array}}$$

$x_2 > x_1$





4 $x_1 > x_2$ $y_1 > y_2$

$x' = x_3 + b$	$y' = y_3 + p$
$x_4 = x' + k_1$ $y_4 = y' - b_1$	$x_5 = x' - k_2$ $y_5 = y' + b_2$