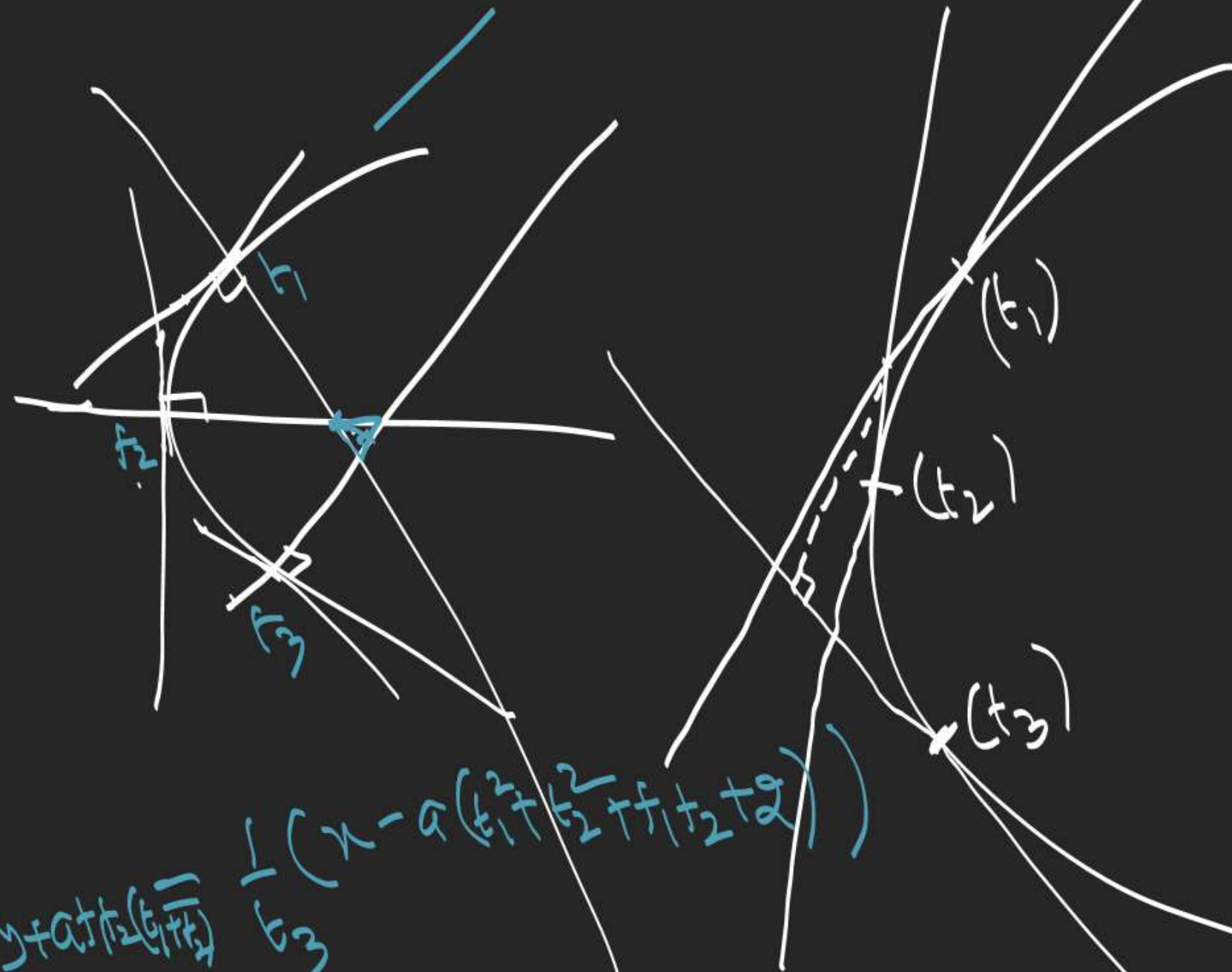


$$t_1 = \omega t \theta_1$$

$$\tan \phi = -\frac{t_1 + t_2}{2} = -\frac{\omega t \theta_1 + \omega t \theta_2}{2}$$



$$-t_3(x - at_1t_2) = y - a(t_1t_2)$$

$$y + t_3x = a(t_1t_2t_3 + t_1 + t_2)$$

$$y + t_2x = a(t_1t_2t_3 + t_1 + t_3)$$

$$(t_3 - t_2)x = a(t_2 - t_3)$$

$$x = -a, y = a(t_1 + t_2 + t_3 + t_1t_2t_3)$$

$$P = (-a, a(t_1 + t_2 + t_3 + t_1t_2t_3))$$

$$y + at_2(t_1 + t_2) = \frac{1}{t_3}(x - a(t_1^2 + t_2^2 + t_1t_2 + 2))$$

$$t_3y - x = -a(t_1^2 + t_2^2 + t_1t_2 + 2 + t_1t_2t_3(t_1 + t_2))$$

$$t_2y - x = -a(t_1^2 + t_3^2 + t_1t_3 + 2 + t_1t_2t_3(t_1 + t_3))$$

Th  $\rightarrow$  Paper-1  
 Fr  $\rightarrow$  Paper 2

$\Sigma x - II (1-15)$   
 $\Sigma x - 30$   
 Remaining ( $\Sigma x - II$ )  
 $\Sigma x - III (1-5)$

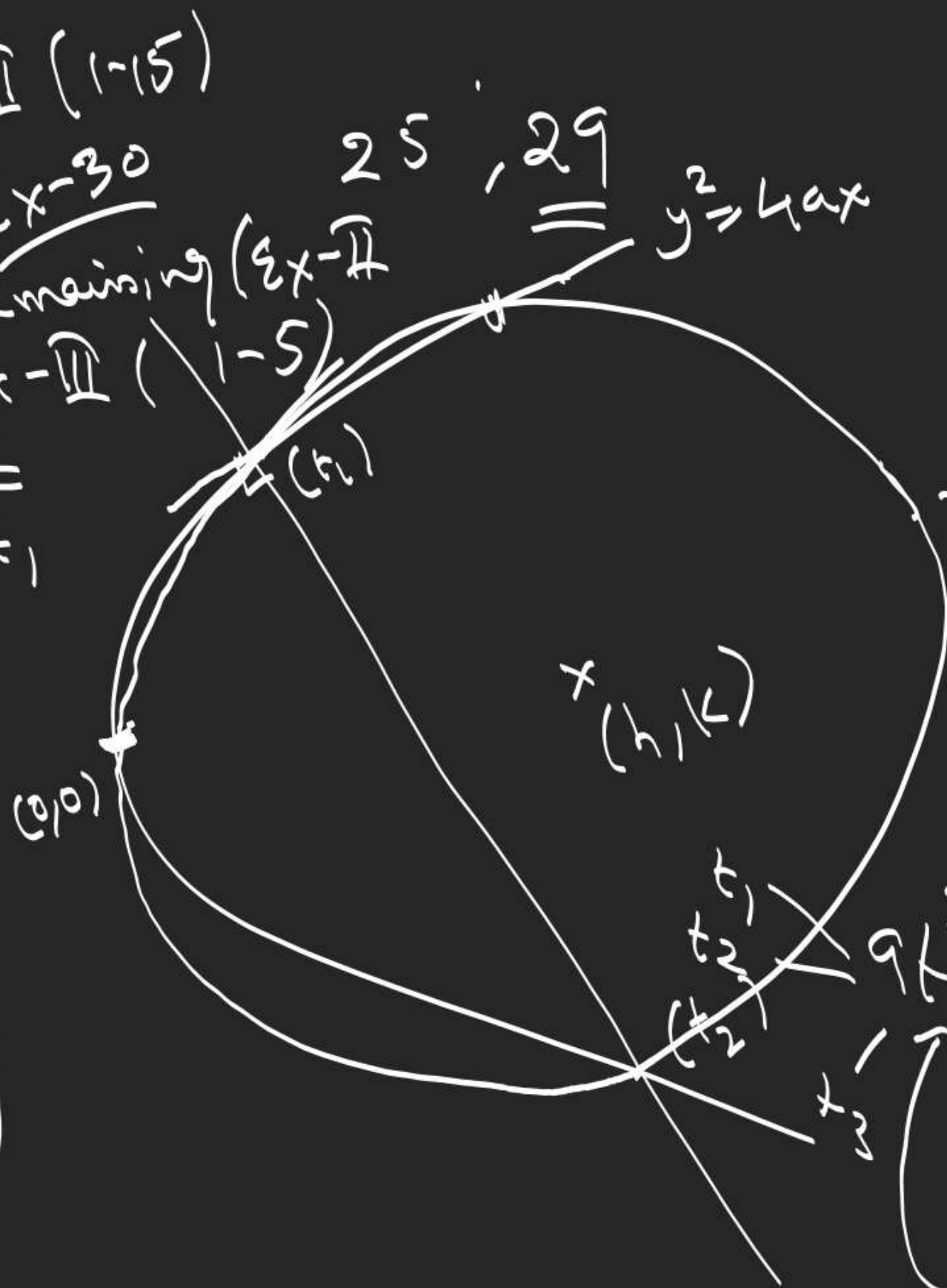
25, 29  $\Rightarrow y^2 = 4ax$

$$t_2 = -t_1 - \frac{2}{t_1}$$

$$t_1 + t_2 = -\frac{2}{t_1}$$

$$\Rightarrow -t_3 = -\frac{2}{t_1}$$

$$t_1 t_3 = 2$$



$$x^2 + y^2 - 2hx - 2ky = 0$$

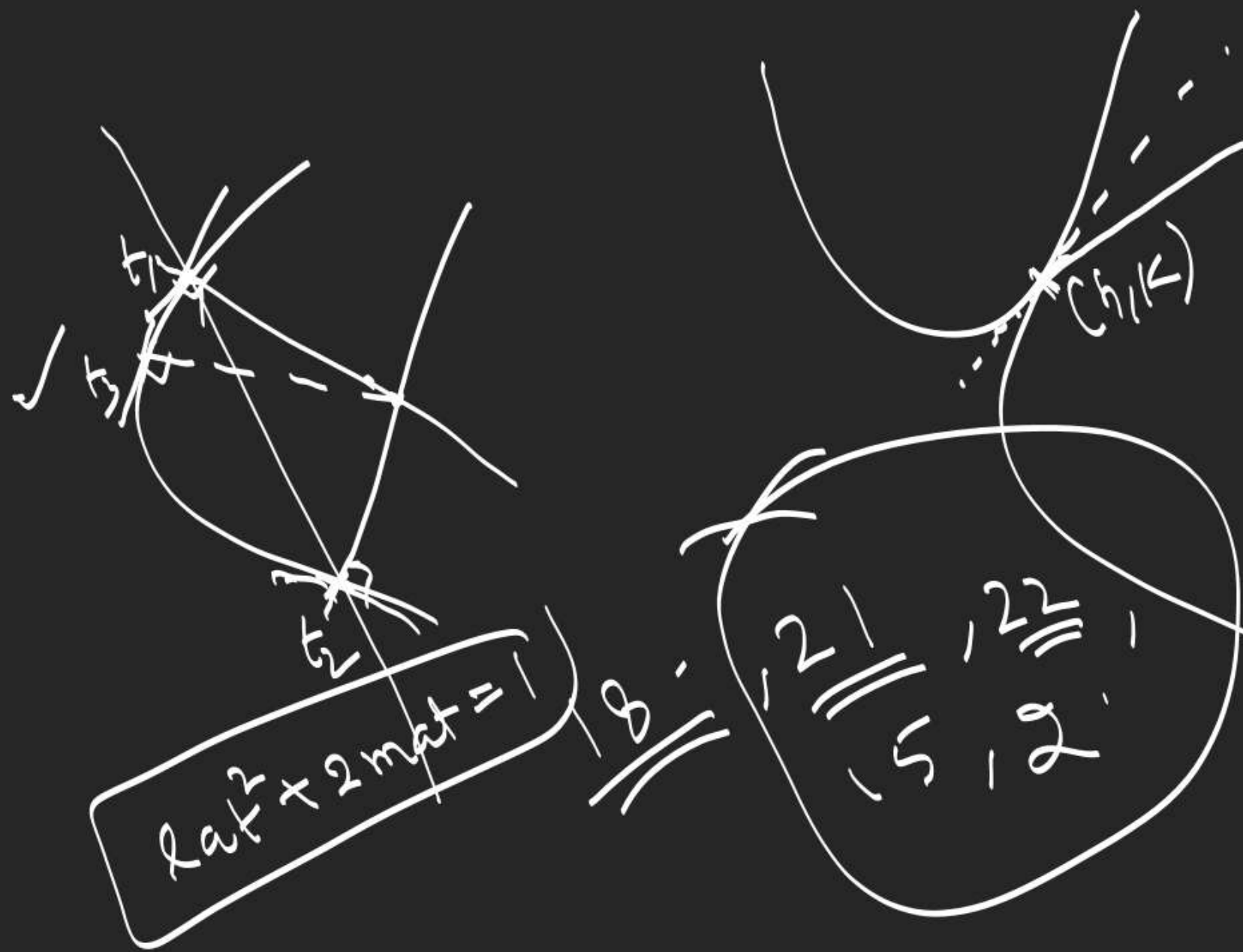
$$a^2 t^4 + (4a^2 - 2ha)t^2 - 4kat = 0$$

$$-4kat = 0$$

$$9t^3 + (4a - 2h)t - 4k = 0$$

$$2t_2 = \frac{4k}{a}$$

$$t_2 = \frac{2k}{a}$$



$$2y' \frac{dy}{dx} = 4a$$

$$m_1 = \frac{2a}{k}$$

$$2x = 4ay'$$

$$\frac{2x}{a} = m_2$$

$$\frac{2a}{k} = \frac{2x}{a}$$

$$2at^2 + 2mat = 1$$

$$8$$

$$\frac{21}{5}, \frac{22}{5}$$