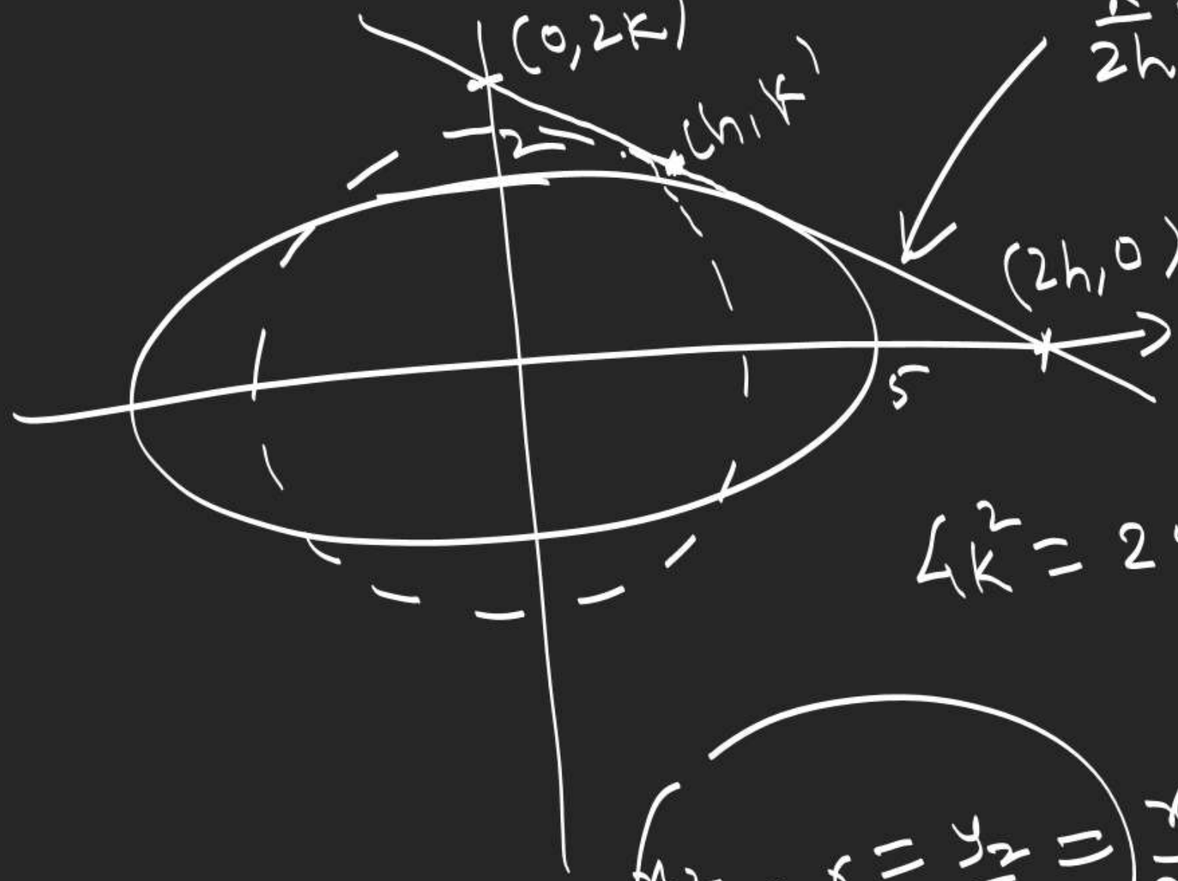
Nishant Jindal



$\frac{x}{2h} + \frac{y}{2k} = 1$

$\Rightarrow y = -\frac{k}{h}x + 2k$

$4k^2 = 25\left(\frac{k^2}{h^2}\right) + 4$

$= \frac{x_2}{x_1} = r = \frac{y_2}{y_1} = \frac{x_3}{x_2} = \frac{y_3}{y_2}$

$\frac{y_2}{x_2} = \frac{y_1}{x_1} = \frac{y_3 - y_2}{x_3 - x_2}$

$\frac{y_2 - y_1}{x_2 - x_1} = \frac{y_3}{x_3}$

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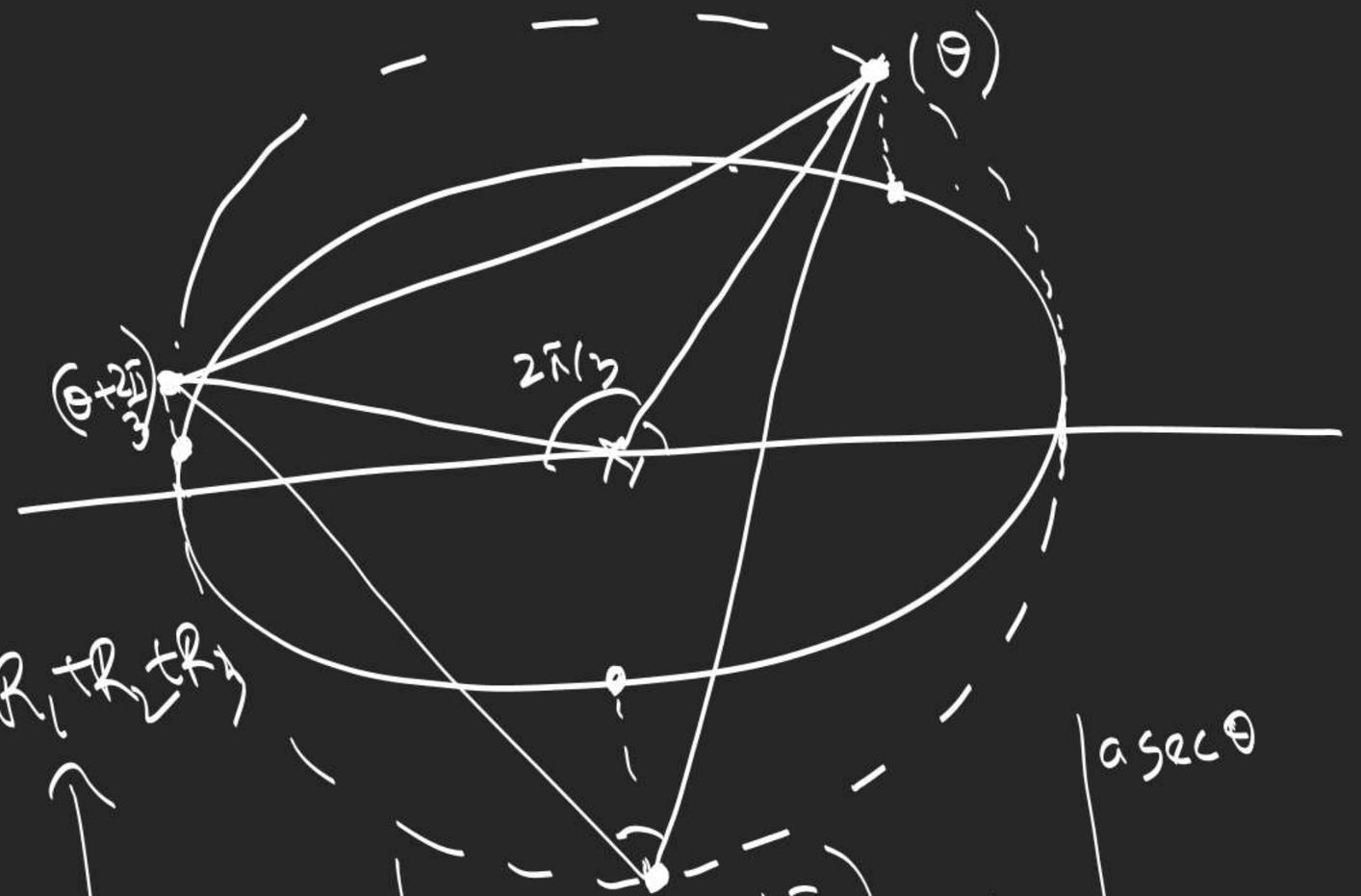

$R_1 \to R_1 + R_2 + R_3$

$$\frac{abc^2e^2}{\Sigma \sin\theta\cos\theta} \begin{vmatrix} \sin\theta & \cos\theta & \sin 2\theta \\ \sin\left(\theta+\frac{2\pi}{3}\right) & \cos\left(\theta+\frac{2\pi}{3}\right) & \sin\left(2\theta+\frac{4\pi}{3}\right) \\ \sin\left(\theta+\frac{4\pi}{3}\right) & \cos\left(\theta+\frac{4\pi}{3}\right) & \sin\left(2\theta+\frac{8\pi}{3}\right) \end{vmatrix} = \begin{vmatrix} a\sec\theta & b\operatorname{cosec}\theta & c^2e^2 \\ a\sec\left(\theta+\frac{2\pi}{3}\right) & b\operatorname{cosec}\left(\theta+\frac{2\pi}{3}\right) & c^2e^2 \\ a\sec\left(\theta+\frac{4\pi}{3}\right) & b\operatorname{cosec}\left(\theta+\frac{4\pi}{3}\right) & c^2e^2 \end{vmatrix}$$

$= 0$

$$\frac{x\cos\left(\frac{\theta_1+\theta_2}{2}\right)}{a}+\frac{y\sin\left(\frac{\theta_1+\theta_2}{2}\right)}{b}=\cos\left(\frac{\theta_1-\theta_2}{2}\right)=\cos\frac{\pi}{8}$$

$$px+qy=r$$

$$\frac{ap}{\cos\left(\frac{\theta_1+\theta_2}{2}\right)}=\frac{2b}{\sin\left(\frac{\theta_1+\theta_2}{2}\right)}=\frac{r}{\cos\frac{\pi}{8}}$$

$$\frac{x\cos\theta}{3\sqrt{3}}+y\sin\theta=1$$

$$L(\theta)=\frac{3\sqrt{3}}{\cos\theta}+\frac{1}{\sin\theta}$$

$$L'(\theta)=\frac{3\sqrt{3}}{\cos^2\theta}\sin\theta-\frac{\cos\theta}{\sin^2\theta}=\frac{3\sqrt{3}\sin^3\theta-\cos^3\theta}{(\quad)^2}$$

$$3\sqrt{3}\tan^3\theta-1$$

$$\cos^3\theta$$

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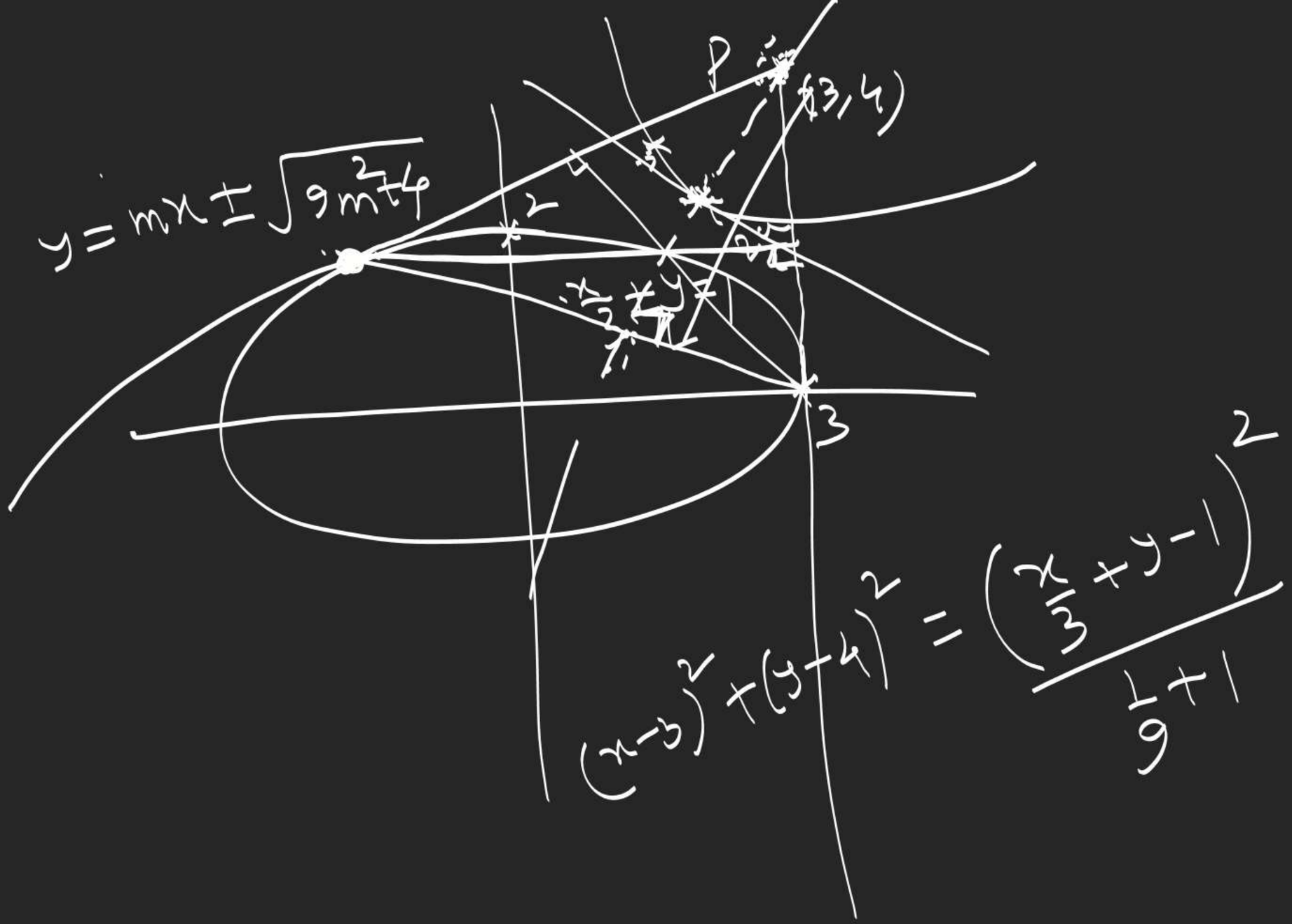

$$(x-3)^2 + (y-4)^2 = \frac{\left(\frac{x}{3} + y - 1\right)^2}{\frac{1}{9}+1}$$

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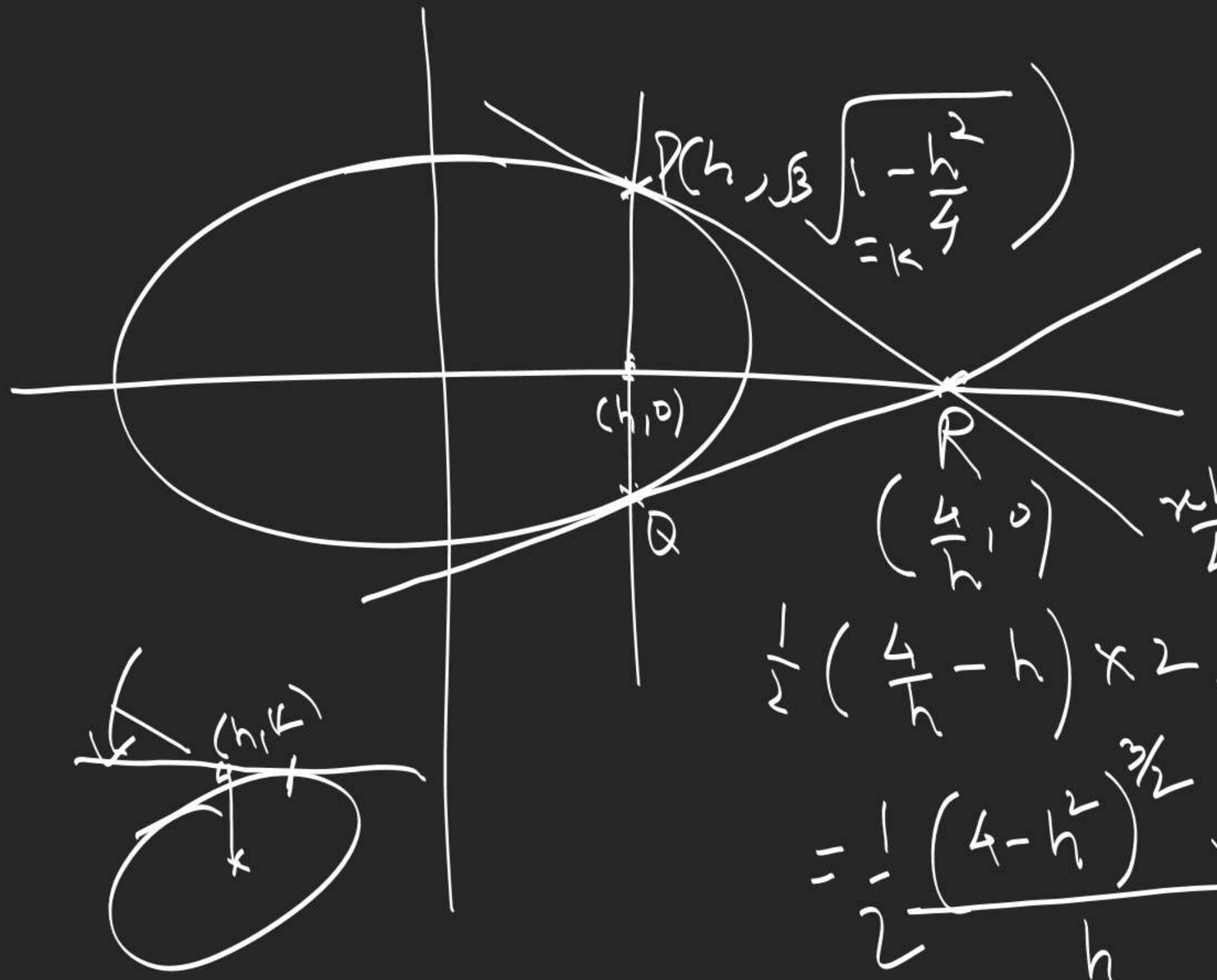

$\frac{xh}{4} + \frac{yk}{3} = 1$

$\frac{1}{2}\left(\frac{4}{h} - h\right) \times 2\sqrt{3}\sqrt{1 - \frac{h^2}{4}}$

$= \frac{1}{2}\frac{\left(4 - h^2\right)^{3/2}\sqrt{3}}{h}$

21-29. + Relations

↓ Thurs.

Monday → Hyperbola (Ex-III)