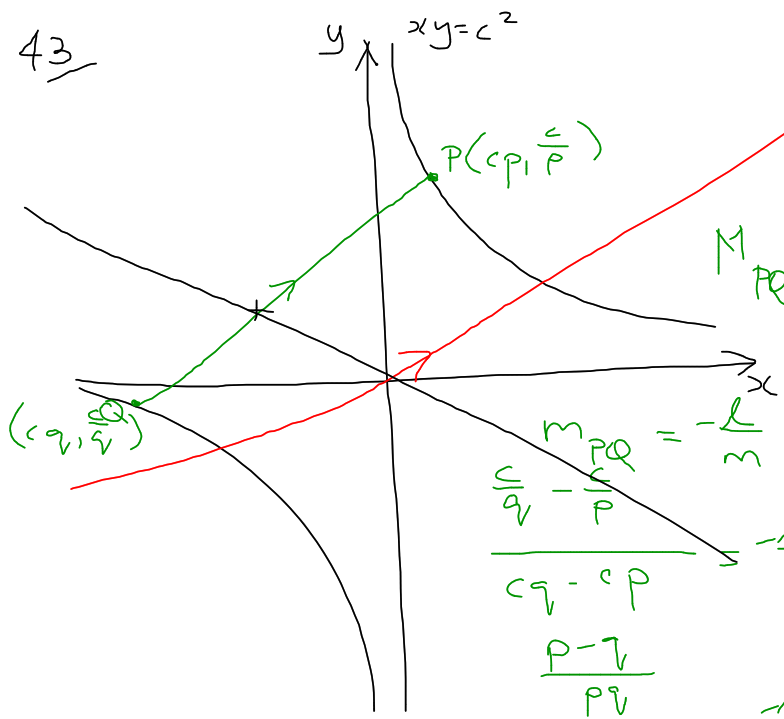


43/



$lxc + my = 0$   
slope =  $-\frac{l}{m}$

$$M_{PQ} = \left( \frac{c(p+q)}{2}, \frac{c(p+q)}{2pq} \right)$$

$$m_{PQ} = -\frac{l}{m}$$

$$\frac{\frac{c}{q} - \frac{c}{p}}{cq - cp} = -\frac{l}{m}$$

$$\frac{p-q}{pq} = \frac{l}{m}$$

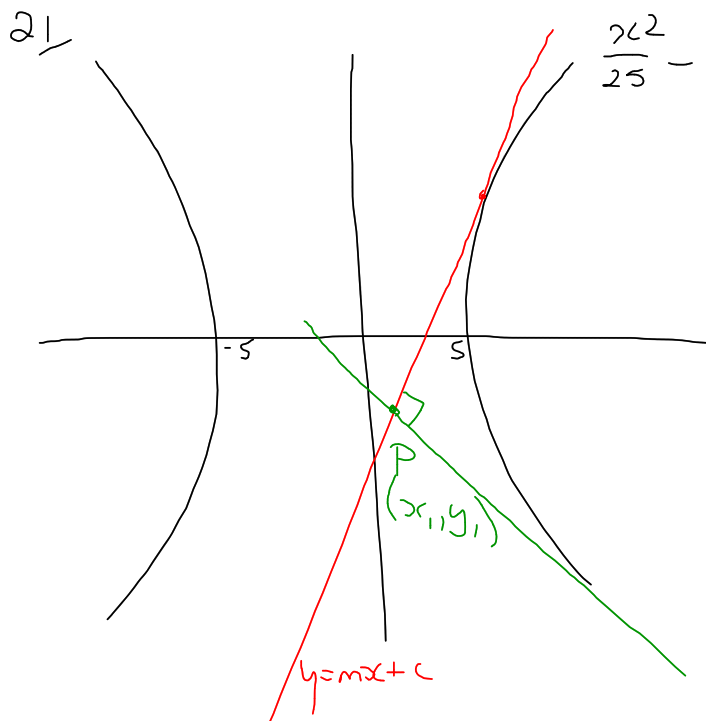
$$\frac{1}{pq} = \frac{l}{m}$$

$$pq = \frac{m}{l}$$

locus

$$y = \frac{x}{pq}$$

$$y = \frac{lx}{m}$$



If  $y = mx + c$   
tangent  
 $c^2 = 25m^2 - 16$

$$25m^2 = c^2 + 16$$

$$m^2 = \frac{c^2 + 16}{25}$$

$$\text{If } y_1 = mx_1 + c \text{ then } 25m^2 = c^2 + 16$$

$$\therefore 25m^2 = (y_1 - mx_1)^2 + 16$$

$$25m^2 = y_1^2 - 2mx_1y_1 + m^2x_1^2 + 16$$

$$(25 - x_1^2)m^2 + 2x_1y_1m - (y_1^2 + 16) = 0$$

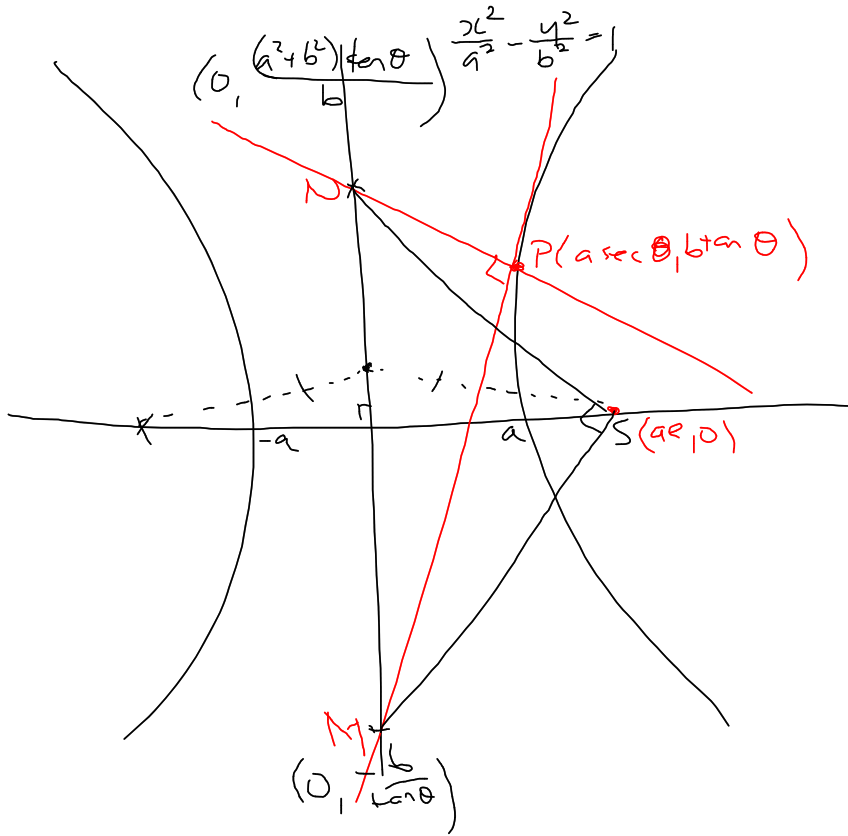
$$\alpha\beta = -1$$

$$\frac{-(y_1^2 + 16)}{25 - x_1^2} = -1$$

$$y_1^2 + 16 = 25 - x_1^2$$

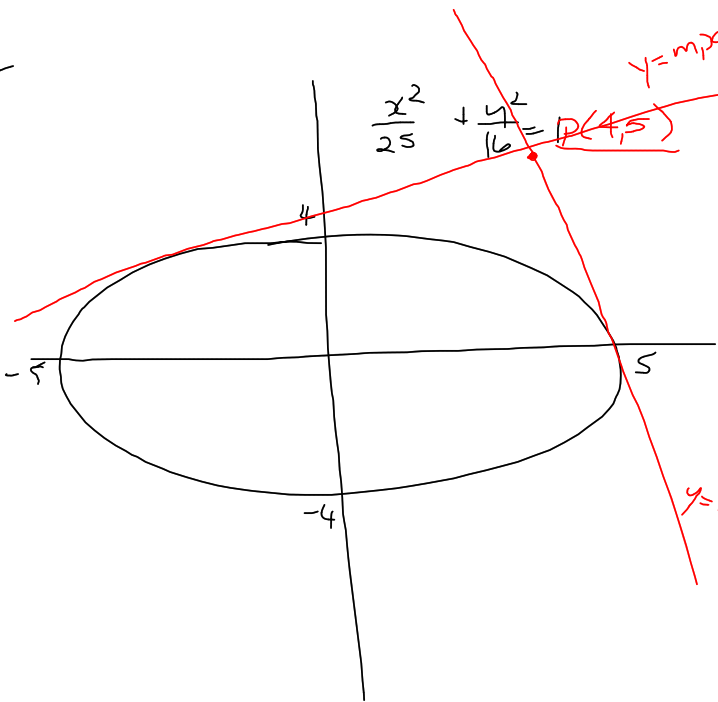
$$\underline{x_1^2 + y_1^2 = 9}$$

29



$$\begin{aligned}
 m_{SN} \times m_{SM} &= \frac{(a^2+b^2)\cancel{a}\cancel{\theta}}{\cancel{b}} \times \frac{\cancel{-b}}{\cancel{a}\cancel{\theta}} \\
 &= \frac{a^2+b^2}{ae^2} \\
 &= \frac{a^2e^2}{a^2e^2} \\
 &= \frac{-1}{1}
 \end{aligned}$$

19



$$y = m_1x + c_1$$

if tangent then

$$c^2 = 25m^2 + 16$$

$$5 = 4m + c.$$

$$(5 - 4m)^2 = 25m^2 + 16$$

$$25 - 40m + 16m^2 = 25m^2 + 16$$

$$9m^2 + 40m - 9 = 0$$

$$\alpha\beta = \frac{-9}{9} = -1$$

$$y = m_2x + c_2$$