$CP \cap PK = P$

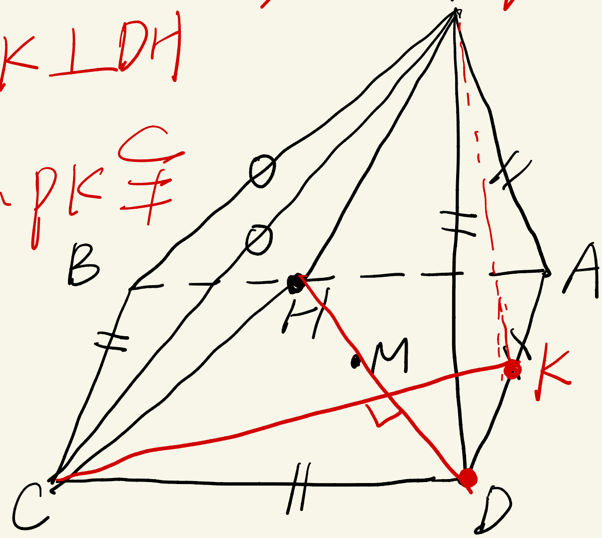
$CP \perp DH$ $\Rightarrow$ $DH \perp$ 平面 PCK

$PK \perp DH$

$\Rightarrow CD$ 垂

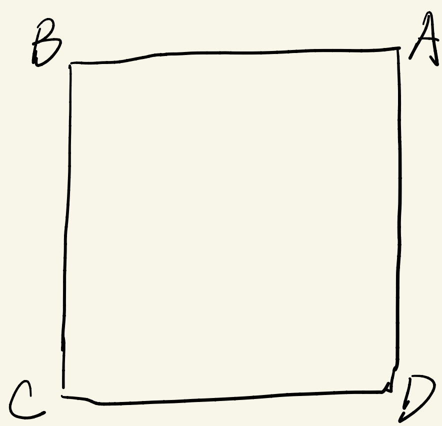
CP、PK 垂

$DH \perp CK$



$MP = MC$

弛



法一：证明 $k_1\cdot k_2=e^2-1=-\frac{16}{25}$

$l_{AQ}: y=k_1x+8 \Rightarrow$ 令 $y=0$ $x_N=-\frac{8}{k_1}$

同理 $x_M=-\frac{8}{k_2}$

李宇

设定点 (x,y) $\vec{MS}\cdot\vec{NS}=0$

$(x+\frac{8}{k_2})(x+\frac{8}{k_1})+y^2=0$

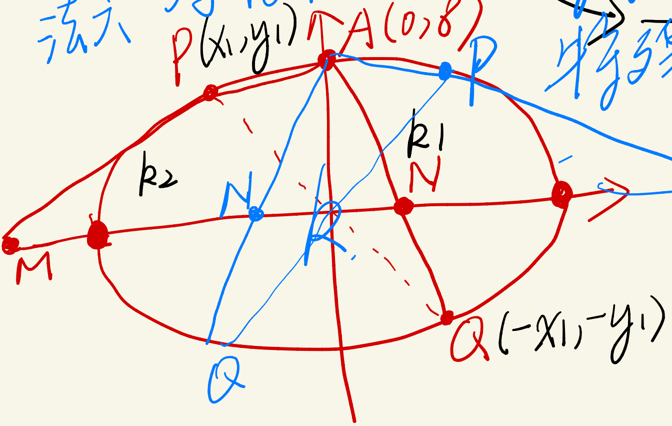
$x^2+(\frac{8}{k_1}+\frac{8}{k_2})x-100+y^2=0$

$\frac{8(k_1+k_2)}{-\frac{16}{25}}$

法六 对称性 → 点在y轴上

特殊值法：$x^2+y^2=100$

$(0,\pm10)$



$\begin{cases} x=0 \\ x^2+y^2-100=0 \end{cases}$

$y=\pm10$

$A(0,8)$ $P(x_1, y_1)$ $\overrightarrow{AP}=(x_1, y_1-8)$

l_{AP} $\frac{x}{x_1}=\frac{y-8}{y_1-8}$ $y=0 \Rightarrow x_M=\frac{-8x_1}{y_1-8}$

特殊值法 (0 ± 10)

同理可得 $x_N=\frac{8x_1}{-y_1-8}=\frac{-8x_1}{y_1+8}$

中点 说明 $(0, \pm 10)$ $x=\frac{-4x_1}{y_1-8}+\frac{-4x_1}{y_1+8}=-4x_1\left(\frac{2y_1}{y_1^2-64}\right)$

$S_M \cdot S_N$

$=$ $=\left(\frac{-8x_1y_1}{y_1^2-64}, 0\right)$

半径 $r=\left|\frac{-4x_1}{y_1+8}+\frac{4x_1}{y_1-8}\right|=\left|\frac{4x_1\times 16}{y_1^2-64}\right|=\left|\frac{64x_1}{y_1^2-64}\right|$

$\left(x+\frac{8x_1y_1}{y_1^2-64}\right)^2+y^2=\frac{(64x_1)^2}{(y_1^2-64)^2}$

$\frac{x_1^2}{100}+\frac{y_1^2}{64}=1$ $y_1^2=64-\frac{64}{100}x_1^2$

$x^2+2\quad x+y^2=\frac{(64x_1)^2}{(y_1^2-64)^2}-\frac{64^2y_1^2}{(y_1^2-64)^2}$

设 $l_{PQ}: y=kx$

联立: $\begin{cases} y=kx \\ \frac{x^2}{100}+\frac{y^2}{64}=1 \end{cases}$ $\Rightarrow Ax^2+Bx+C=0$

$x_1+x_2=0$

$x_1x_2=-x_p^2$

$\Rightarrow x_p=f(k)$

$y_p=k\cdot f(k)$

$P(\_\_\_\_, \_\_\_\_)$

$Q(\_\_\_\_, \_\_)$

李宇 $k_1k_2 = e^2 - 1$ + $S(x,y)$

乔 x_m. x_n. 中点 r. 圆方程

杨 对称性+轴 $\longrightarrow (0, \pm 1D) \longrightarrow$

两轴 $\longrightarrow (0, \pm 1D) \longrightarrow$

李司 参考方程

肖 $y = kx \longrightarrow$ $P(\_, \_)$

$Q(\_, \_)$

帅 $\boxed{\text{红绝}}$ + $S(x,y)$