①

Titolo nota 04/02/2006

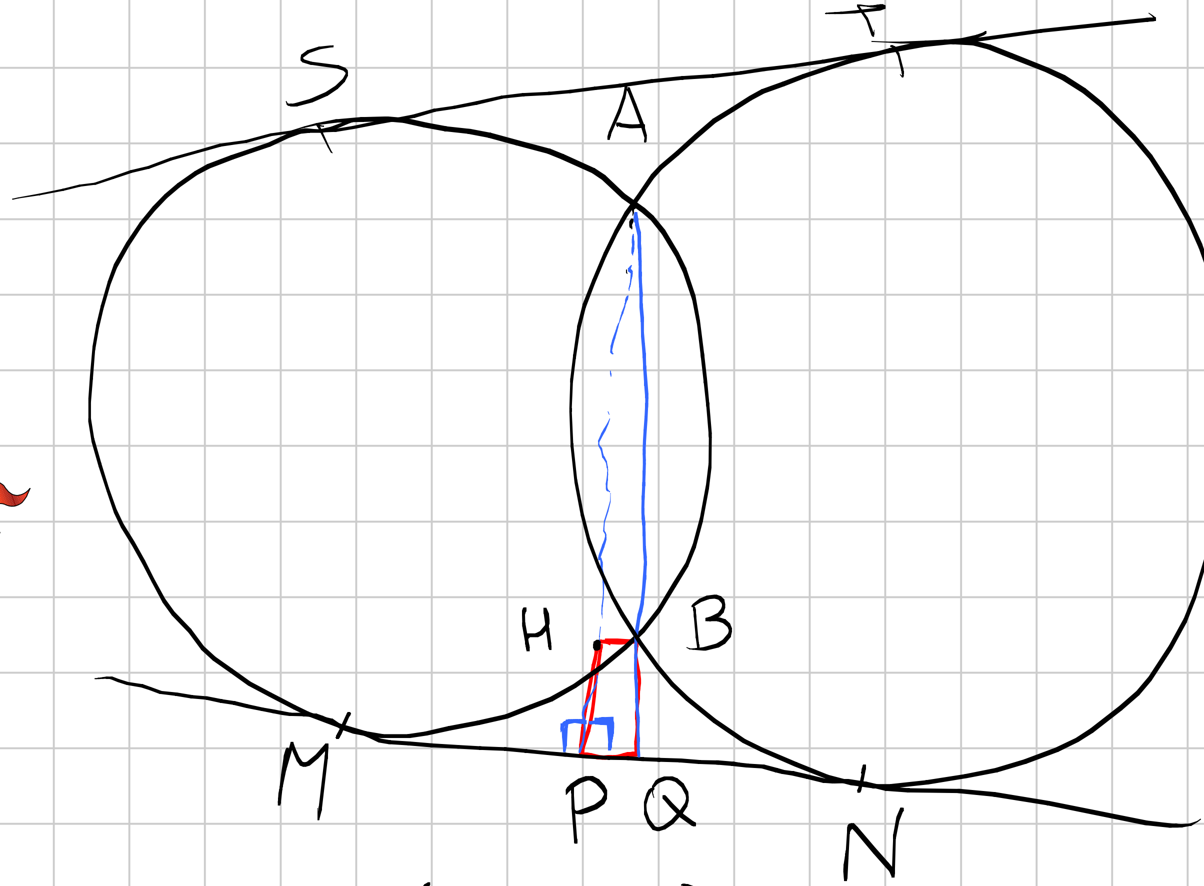
2 CIRC RAGGI DIVERSI si INCONTRANO in A e B

MN ed ST 2 tg. comuni (M ed S sulla stessa circ)

Tesi: gli ortocentri di AMN, AST, BMN, BST sono i vertici di RETTANGOLO

② ABC acutangolo, O circocentro. Le circ. con centro nei p.ti medi dei lati e passanti per O si intersecano in K, M, L.

Tesi: O è INCENTRO di KML.



$H = H_{AMN}$

$AH \cdot AP = AB \cdot AQ$

$\Updownarrow$

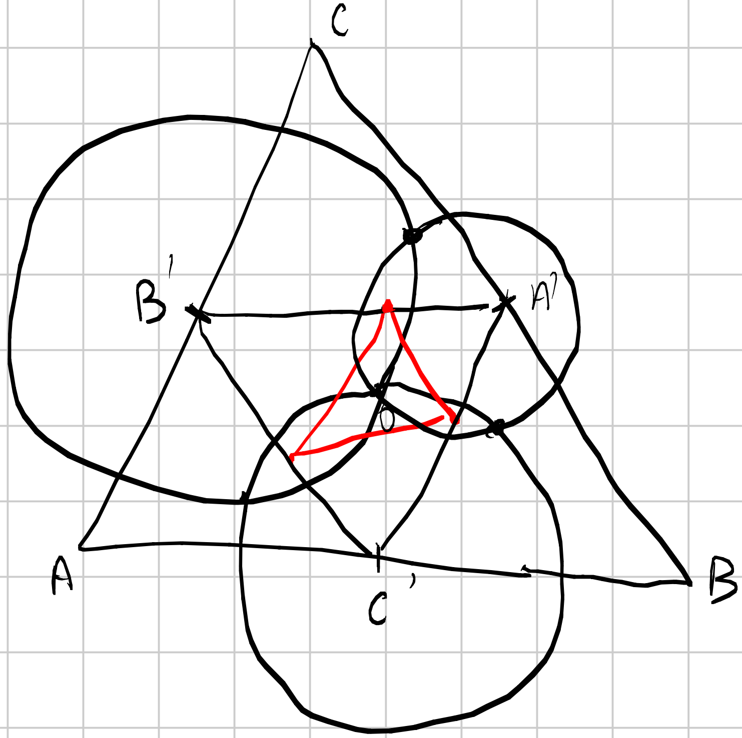
Rosso ciclico

$$AH \cdot AP = (AP - HP)AP = AP^2 - HP \cdot AP =$$

$$= AP^2 - MP \cdot PN = AQ^2 - PQ^2 - (MQ - PQ)(MQ + PQ)$$

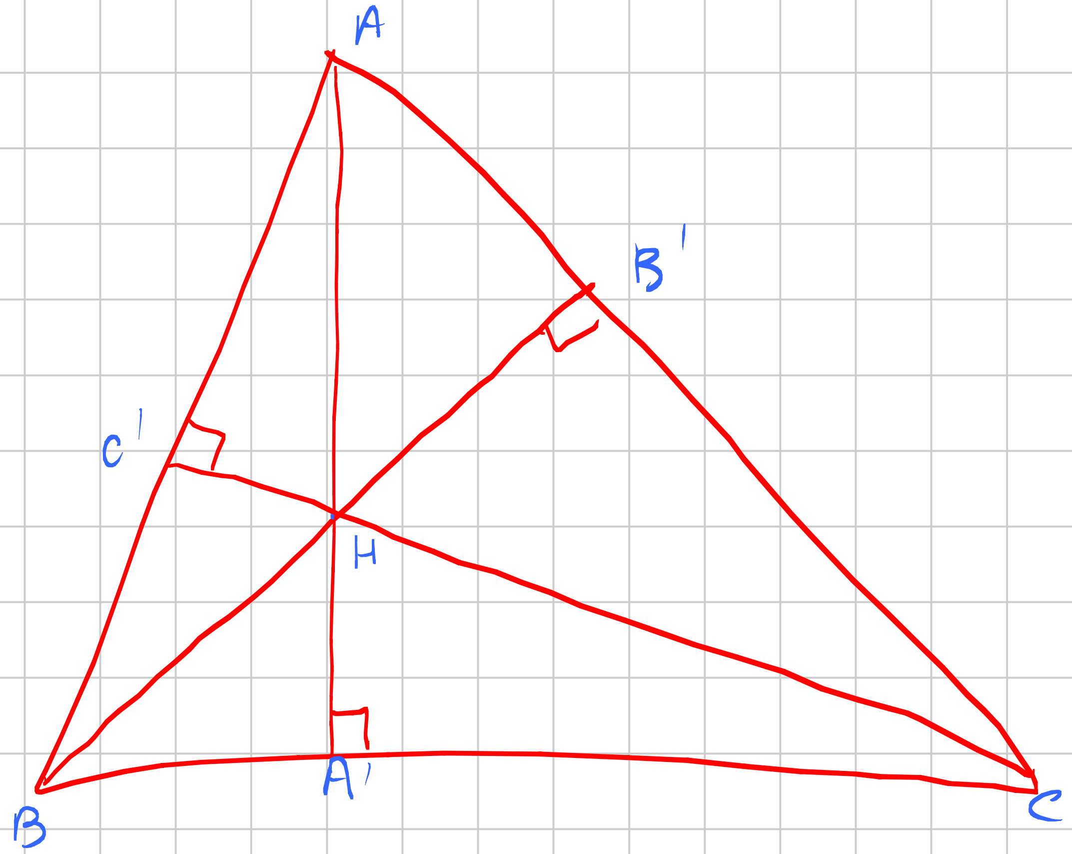
$$= AQ^2 - \cancel{PQ^2} - MQ^2 + \cancel{PQ^2}$$

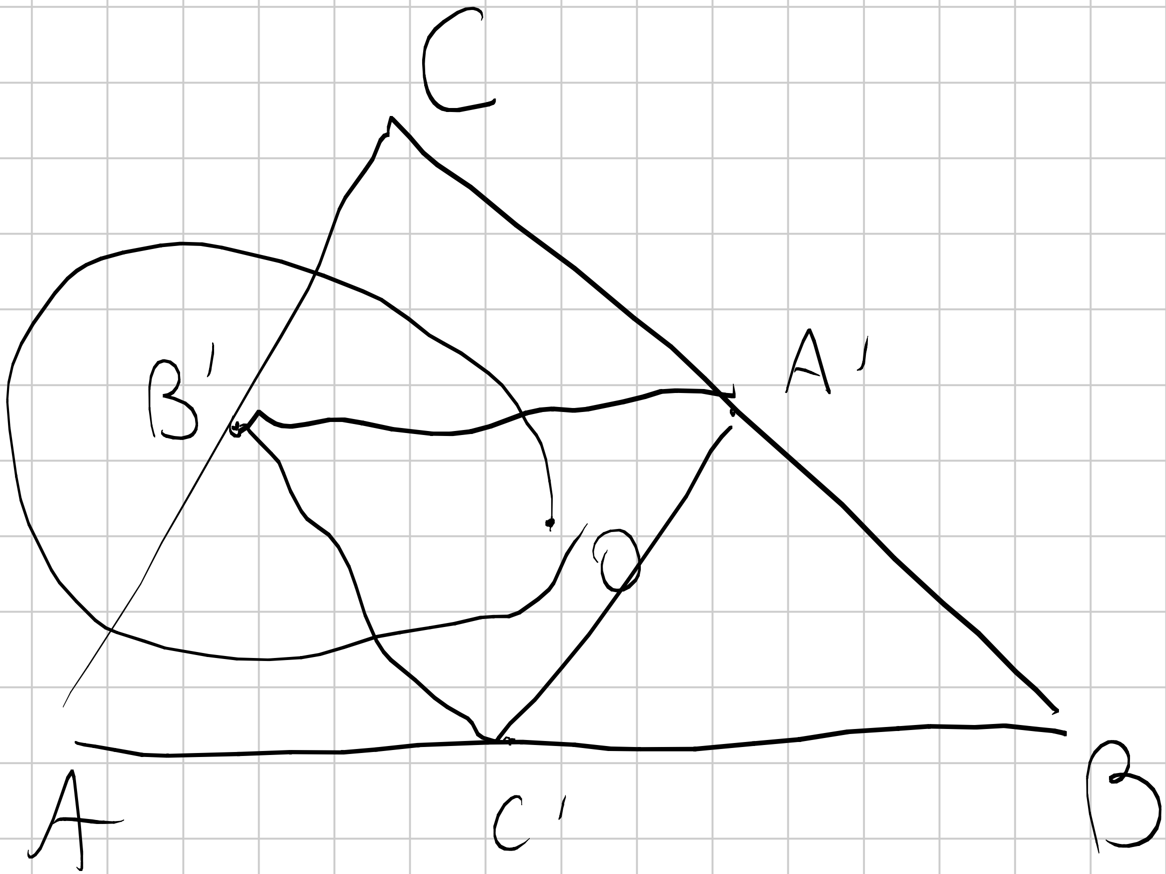
$$= AQ^2 - AQ \cdot BQ = AQ(AQ - BQ) = AQ \cdot AB$$



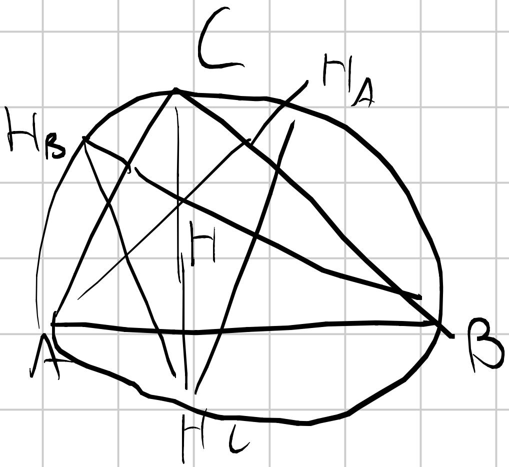
O è ORTOCENTRO

A'B'C'


A
B'
C'
H
B
A'
C

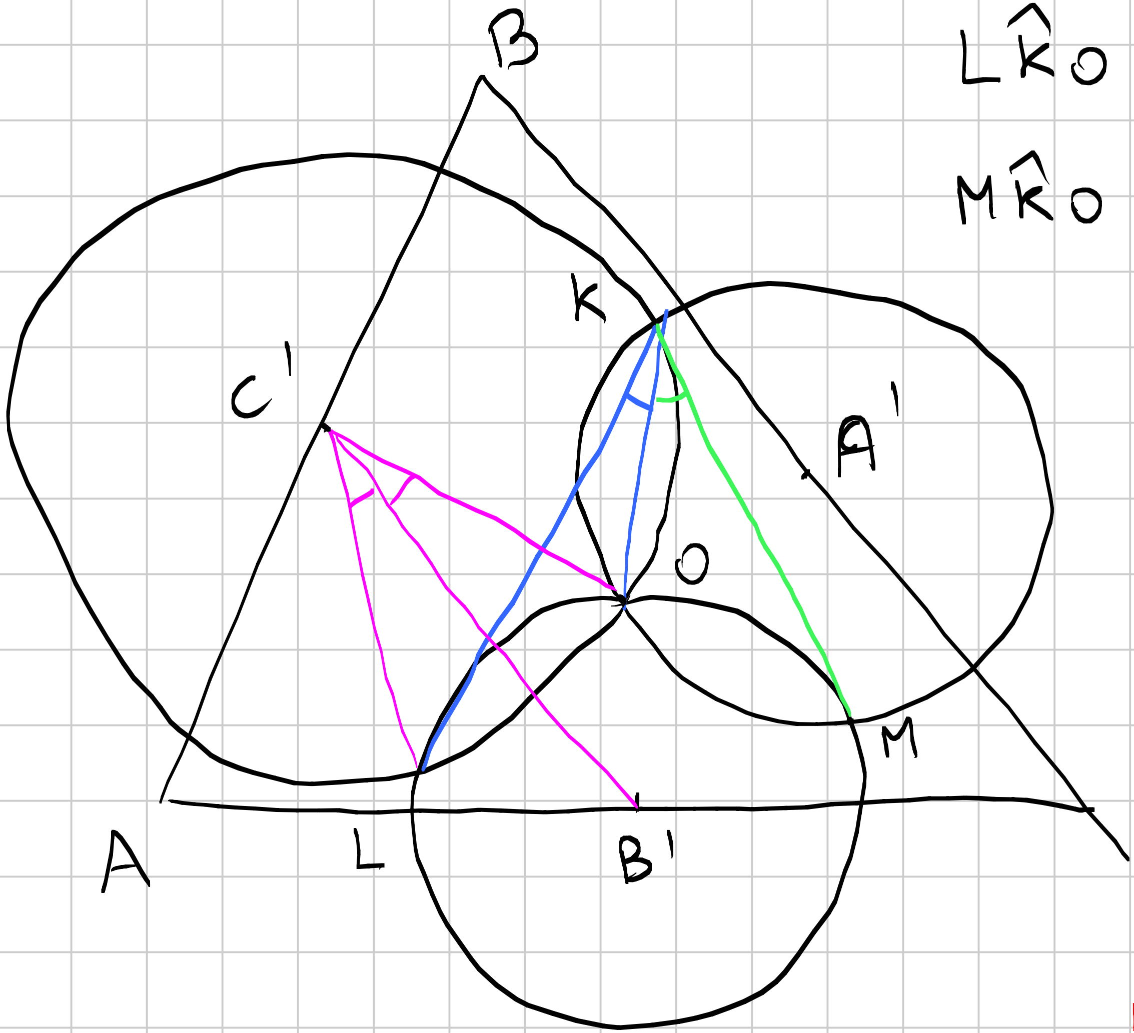

C
B'
A'
O
A
C'
B

I SIMMETRICI DELL'ORT. RISPETTO AI LATI FORMANO 1 TRIANGOLO DI CUI L'ORT. INIZIALE È L'INCENTRO



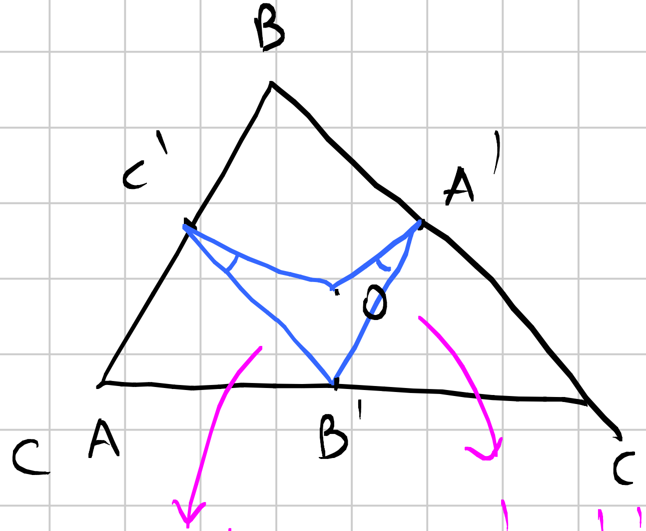
$$H_B \hat{H_C} H = H_B \hat{B} C =$$

$$= C \hat{A} H_A = C \hat{H_C} H_A$$



$$L\hat{K}O = \frac{1}{2}\, LC'O = B'C'O$$

$$M\hat{K}O = \frac{1}{2}\, OA'M = B'A'O$$



C'B e C'O

OA' e A'B'

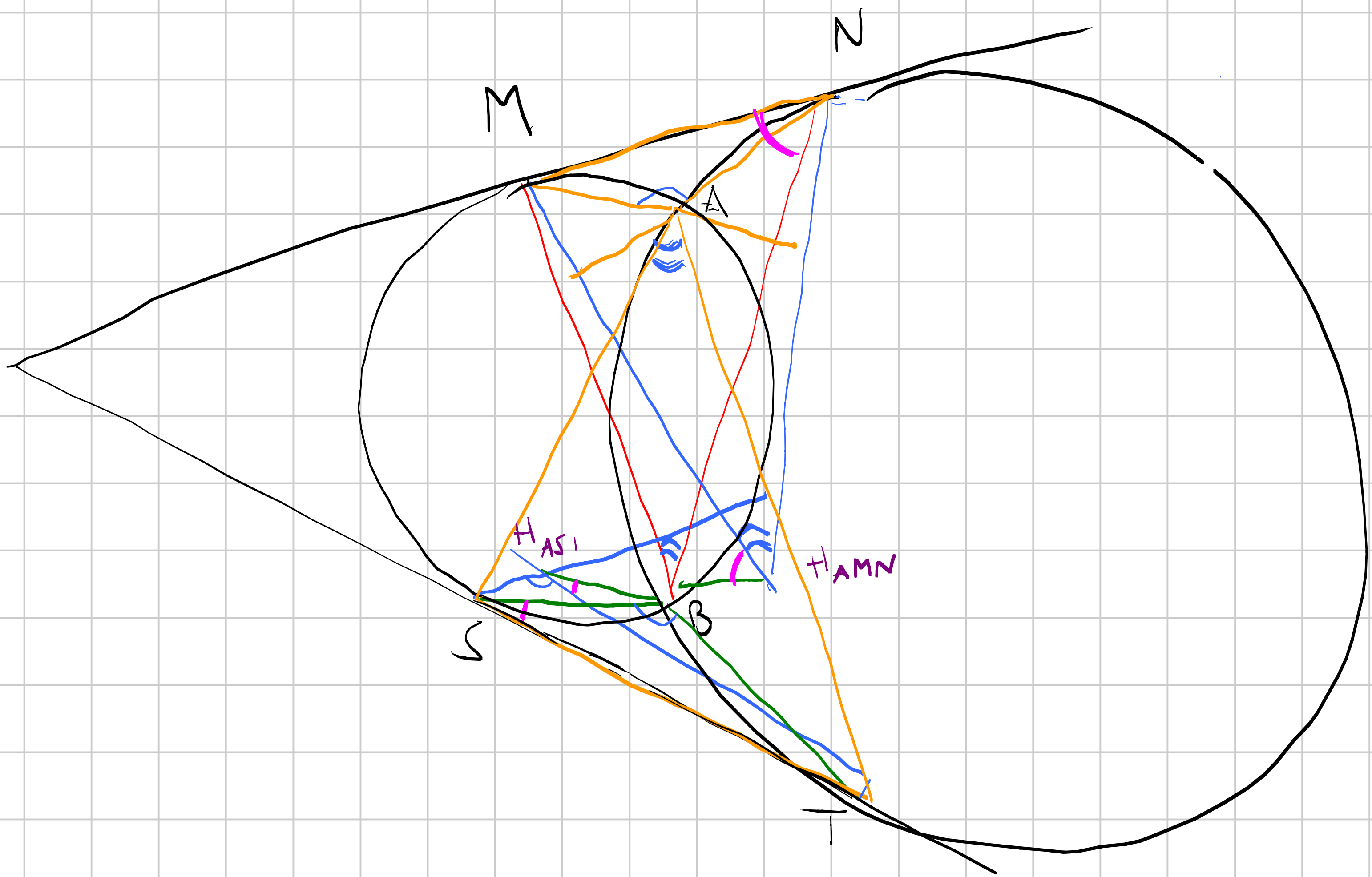
C'B // BC ⊥ A'O

C'O ⊥ AB // A'B'

La simmetria risp. a F (di A, B, C) manda K, L, M nei piedi delle altezze di A, B, C e manda O in H.

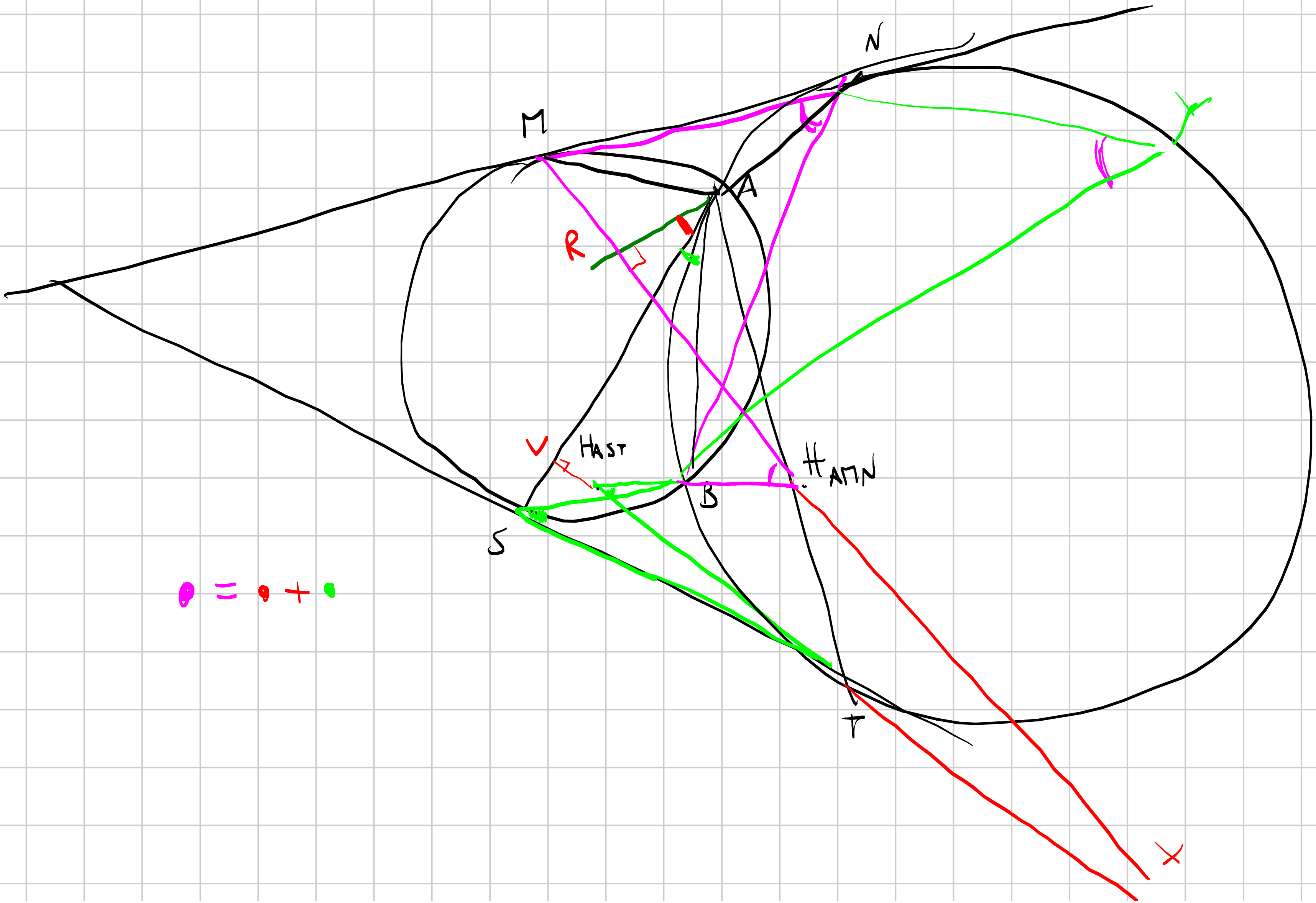
H incentro dei piedi delle altezze

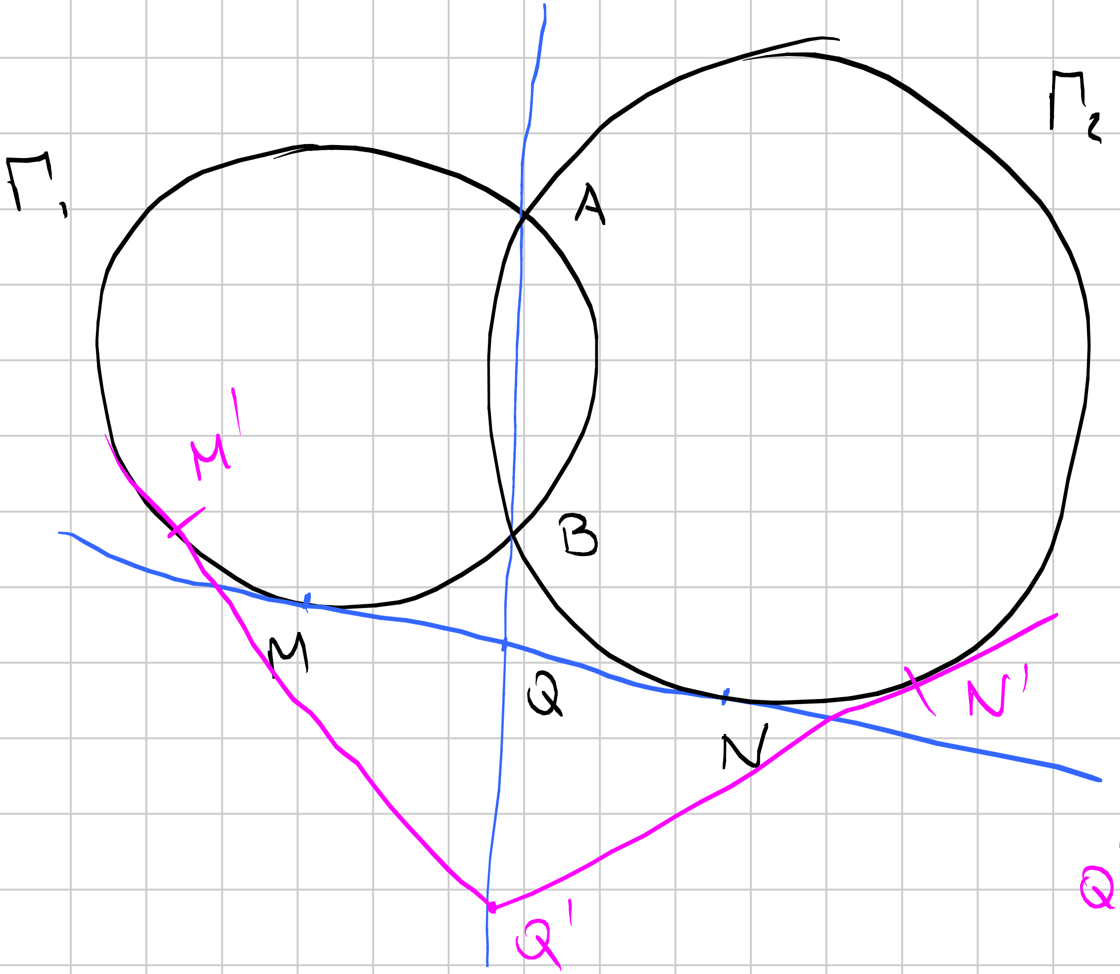
$$H \downarrow O \qquad \downarrow K, L, M$$



M
N
A
B
S
T
H_{AS1}
H_{AMN}

6



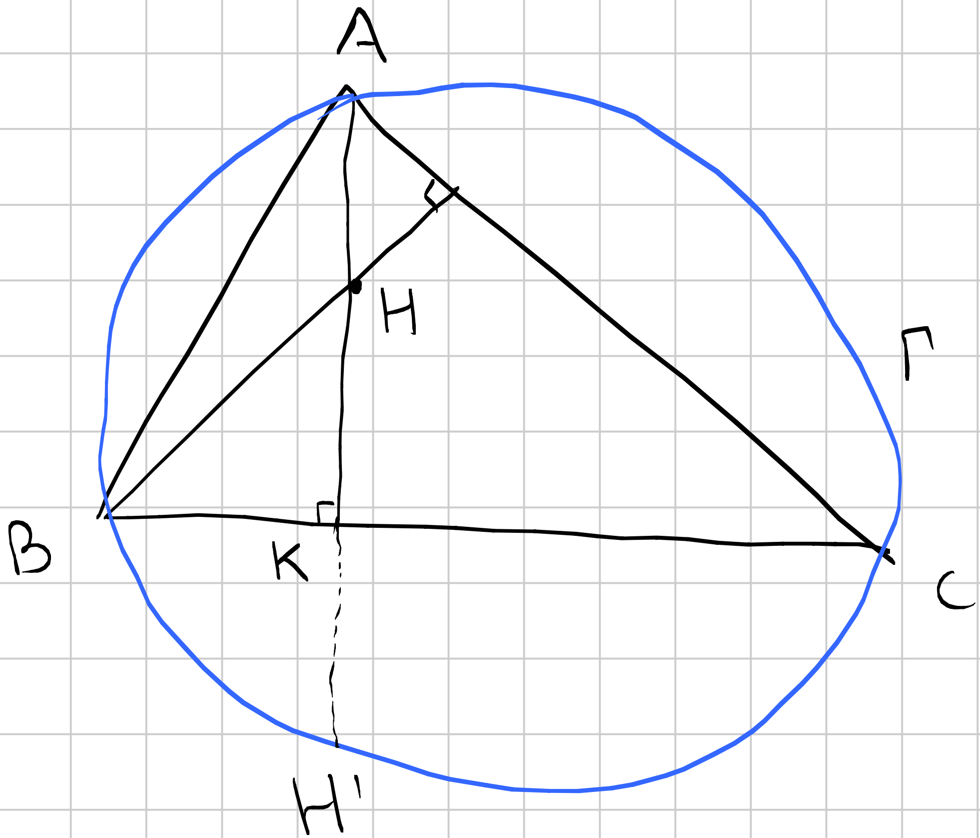


$$MQ = QN$$

$$MQ^2 = \mathrm{pow}_{\Gamma_1} Q$$

$$QN^2 = \mathrm{pow}_{\Gamma_2} Q$$

$$Q'M' = Q'N'$$



$$AK \cdot KH = BK \cdot KC$$

$$\parallel$$

$$AK \cdot KH'$$

$$\mathrm{pow}_{\Gamma} K$$