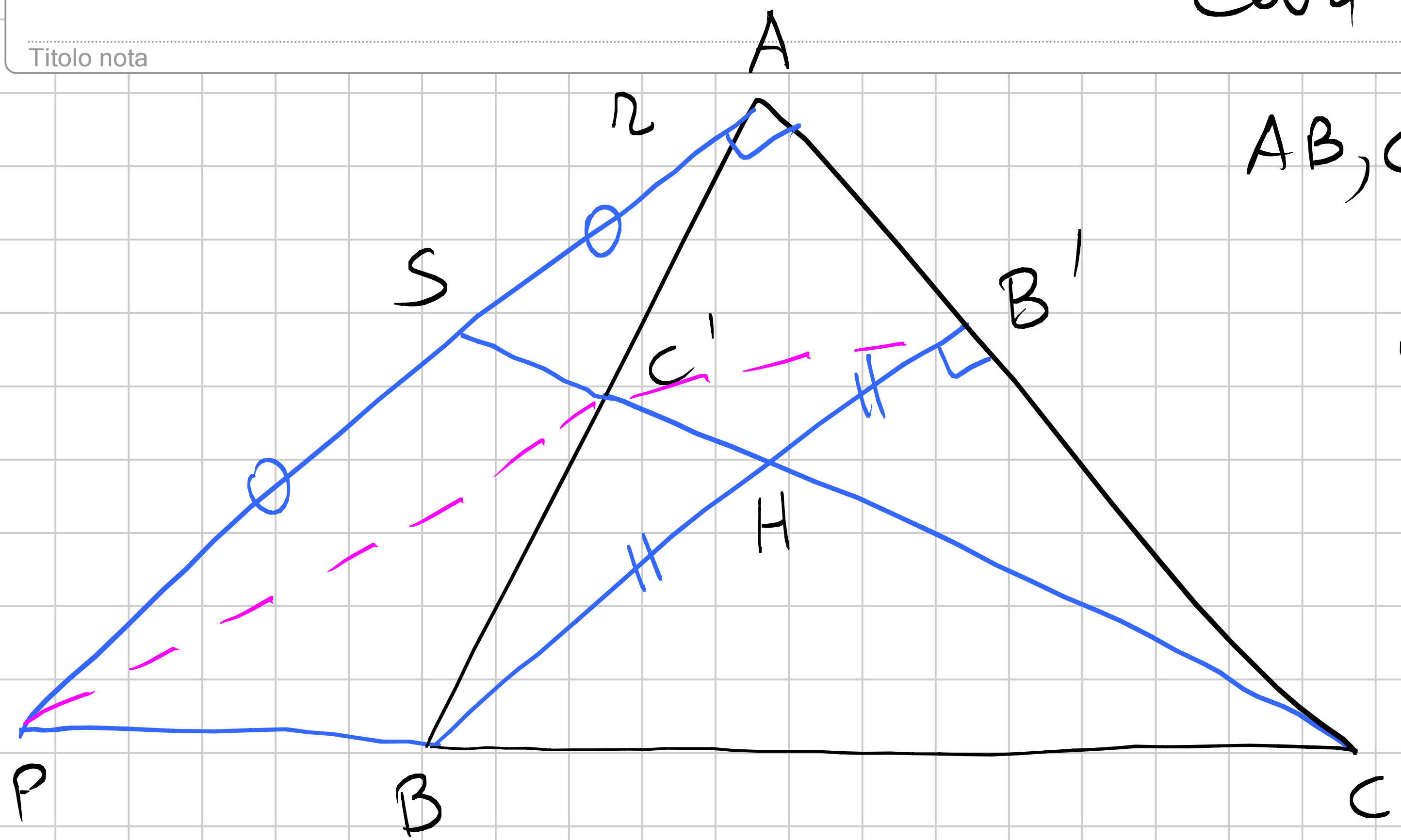
Titolo nota 24/05/2006

Ceva

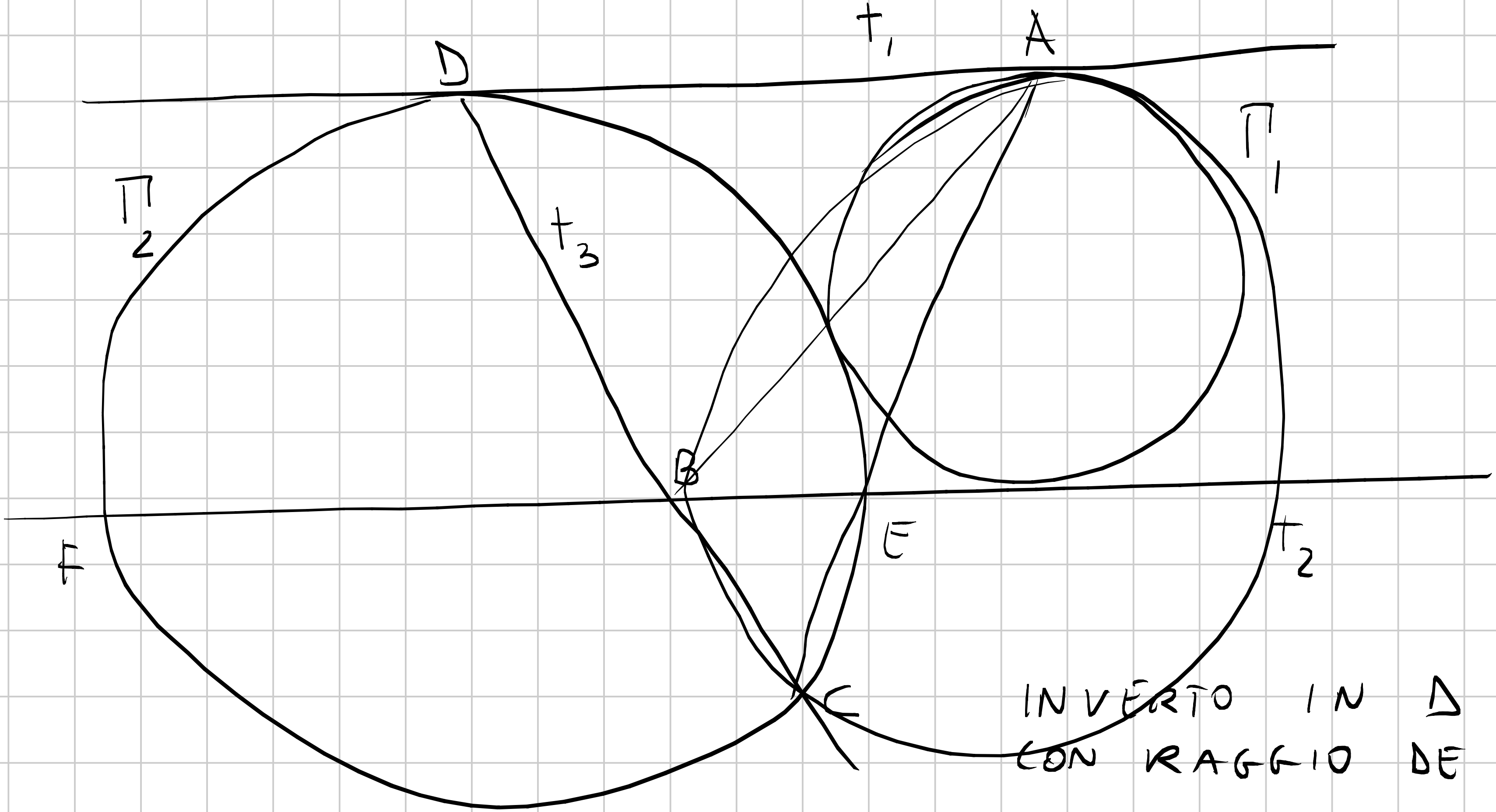


AB, CS, PB'

$\Downarrow$

concorrono

$P = BC \cap r$

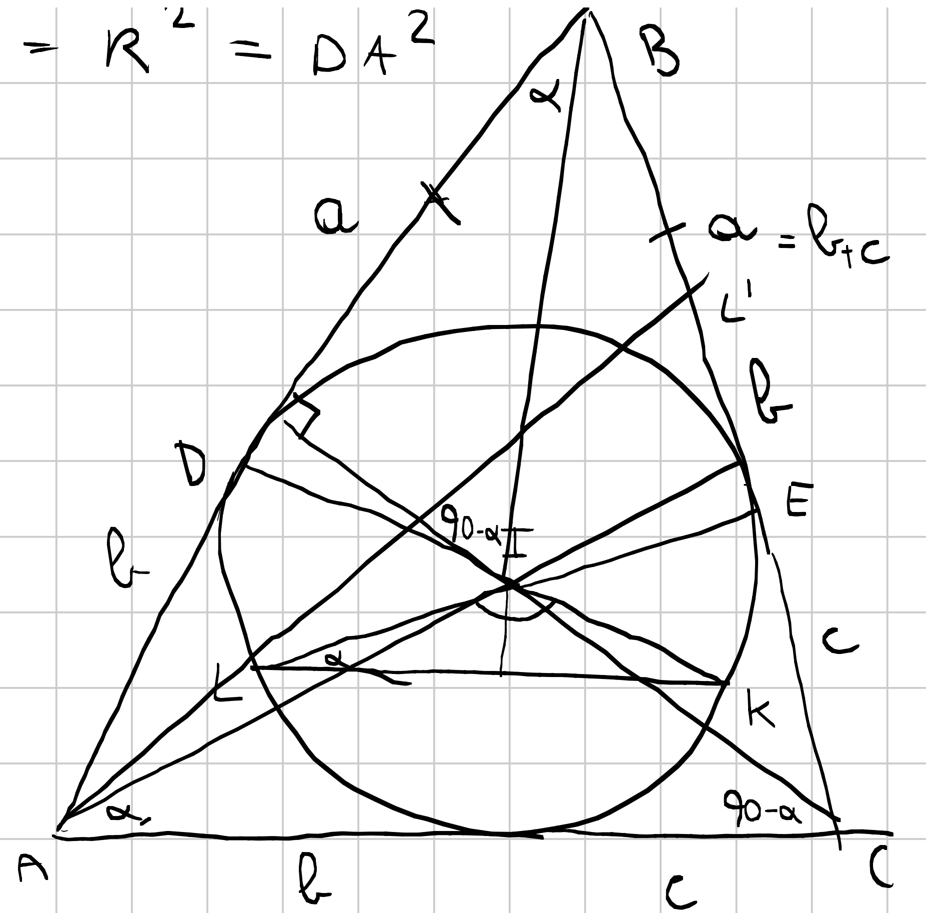


INVERTO IN D
CON RAGGIO DE

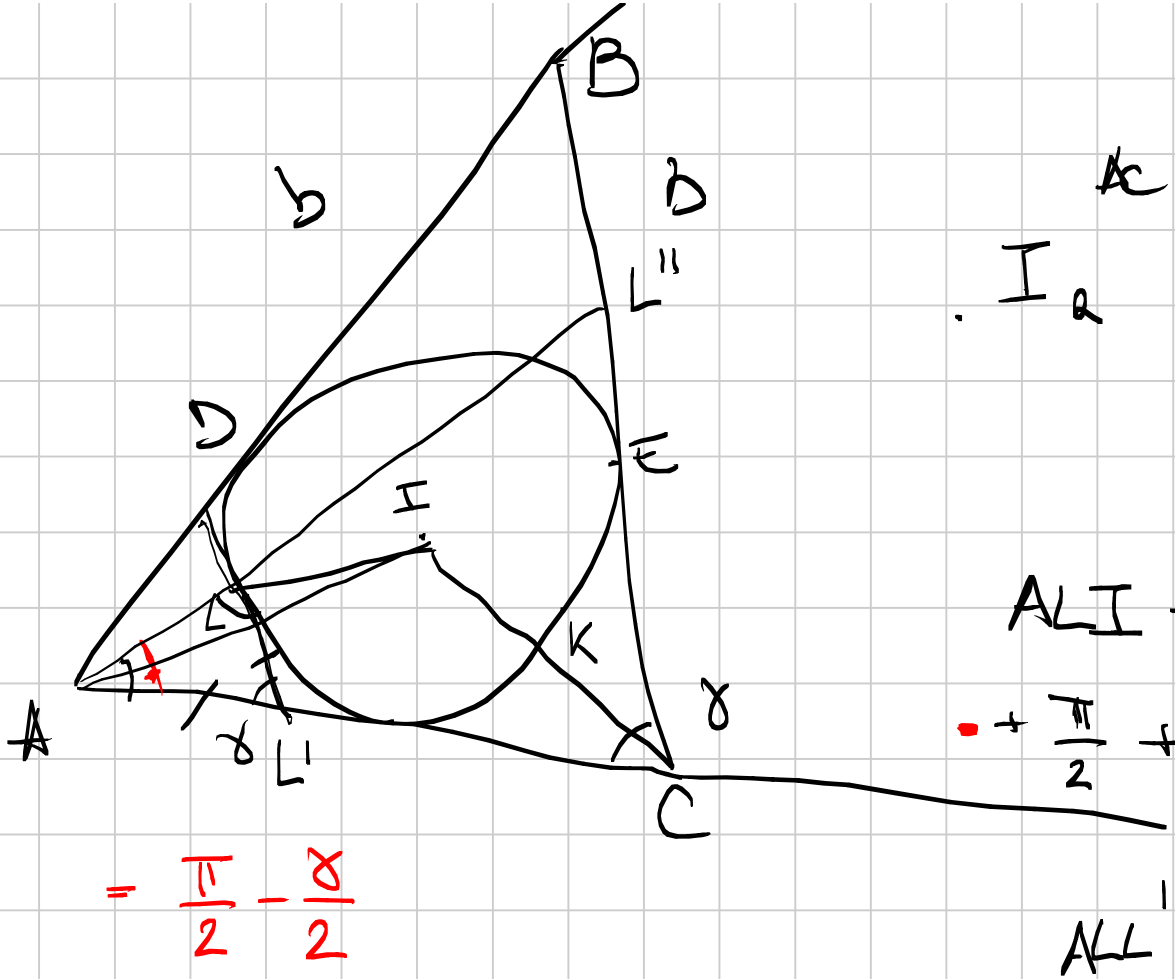
$E \to E$ $\quad F \to F$ $\quad \Gamma_2 \to t_2$ $\quad t_2 \to \Gamma_2$

$t_1 \to t_1$ $\quad \Gamma_1 \to \Gamma_1$ $\quad A \to A$ $\quad t_3 \to t_3$ $\quad B \to C$

$$DB \cdot DC = R^2 = DA^2$$



$$a + b + a + c = 3b + 3c$$
$$a = b + c$$



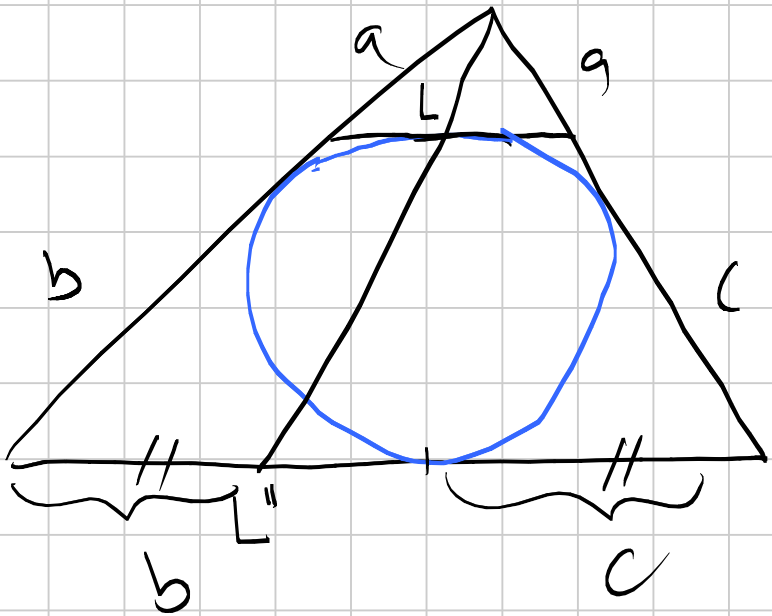
$AC = BE = L''C$

I_a

$ALI + ACI = \pi$

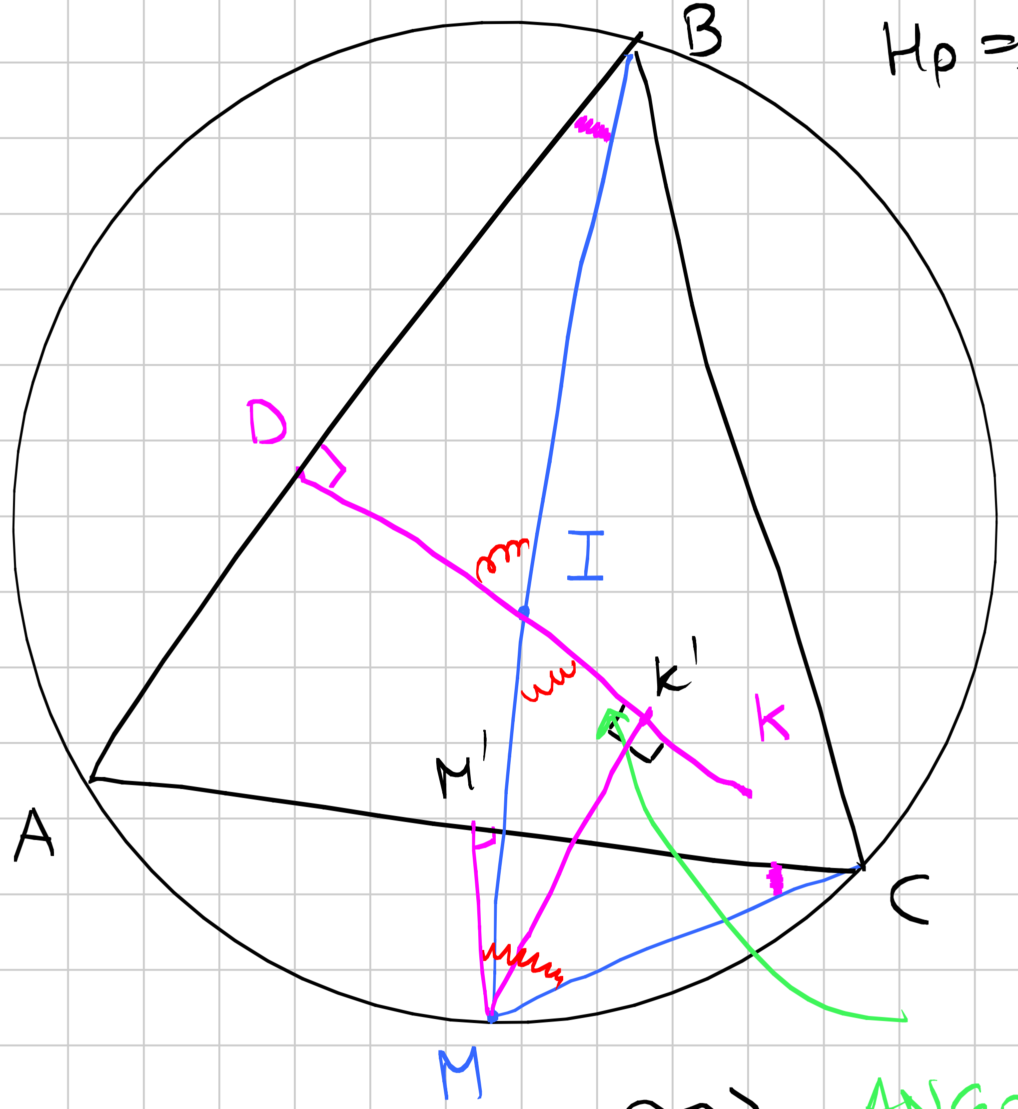
$\cdot + \frac{\pi}{2} + \frac{\gamma}{2} = \pi$

$ALL' \to AL''C$



In L'' tange la
circ. ex-inscritta

Motivo: OMOTETIA



Hp $\Rightarrow$ $BD = AC$

$BD = 2M'C$

2 lati lung

$IDB \sim MM'C$

$K'MI = M'CM$

$MC = MI = MK$

K' è il p.to medio di IK

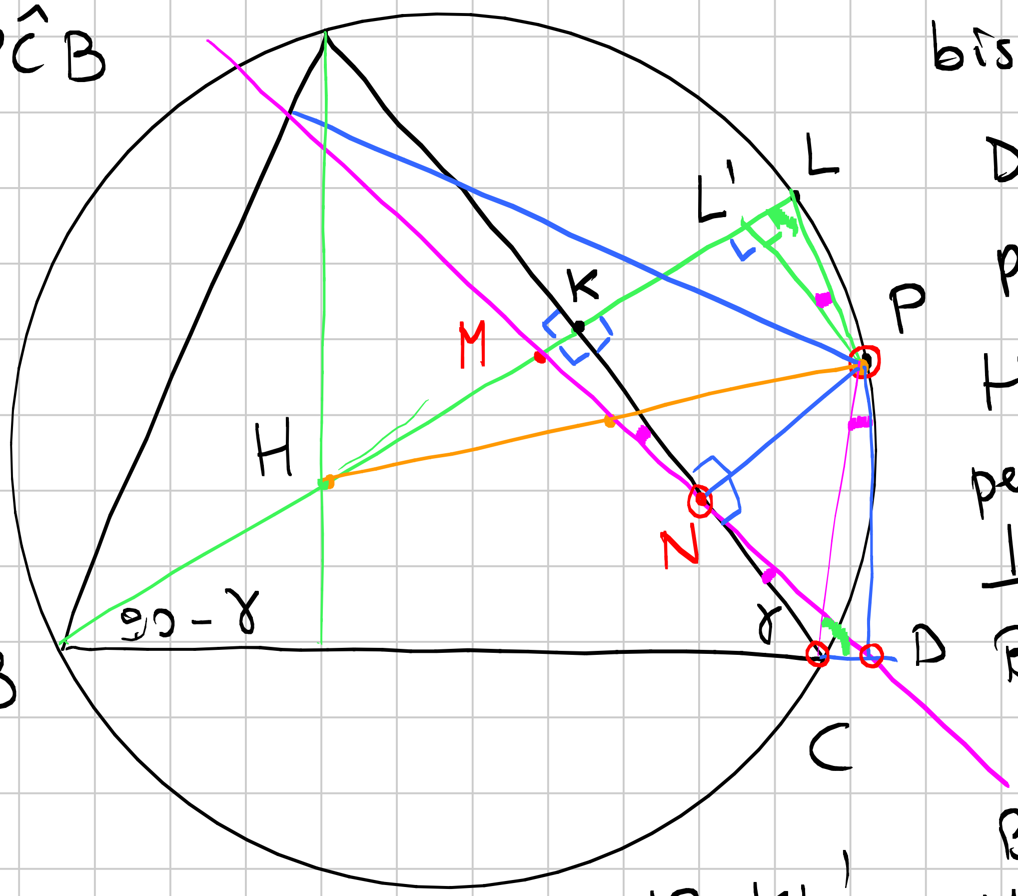
$\rightsquigarrow$ ANGOLO RETTO

Basta dim.

$P\hat{L}B = 180 - P\hat{C}B$

$= P\hat{C}D$

$\Downarrow$



retta SIMSON biseca HP

Dico MHNP parallelogramma

$HM \parallel NP$

perché tutti e 2 $\perp$ al lato AC

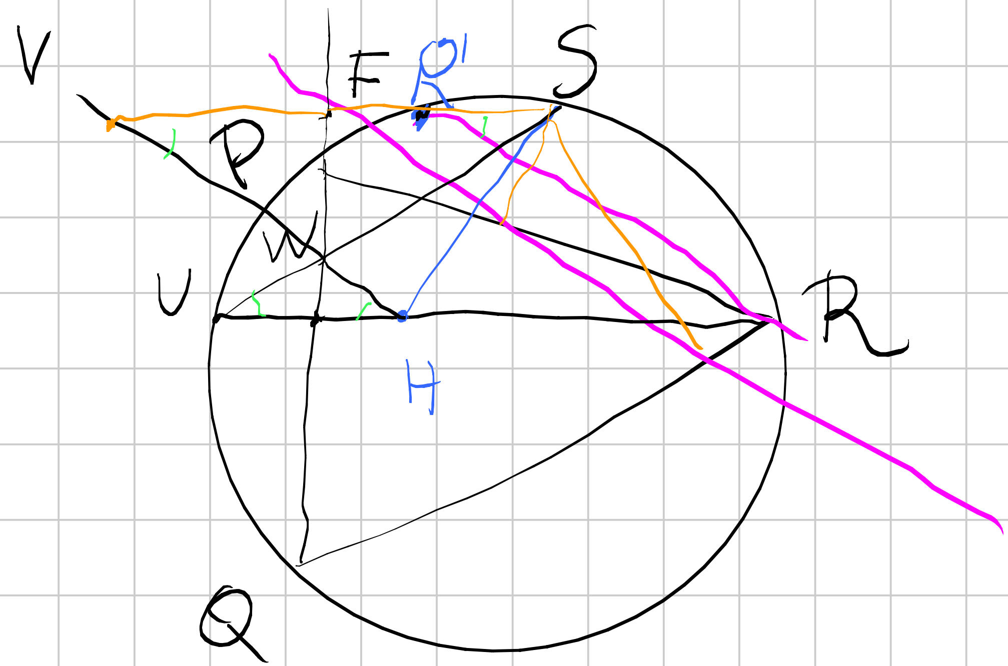
Basta $HM = NP$

Basta dim. che

$MK = L'L$

K = p.to medio di HL $\Rightarrow$ $HK = KL$

$NP = KL'$ (rettangolo)



$RR' \parallel$ retta Simson

$R\hat{R'}S = R\hat{U}S =$

$= W\hat{H}U =$

$= W\hat{V}S$

$VH \parallel RR'$

Dimostrare che OO_1BO_2 è un parallelogr.

$CBH = O^2BN = 90 - BKN$

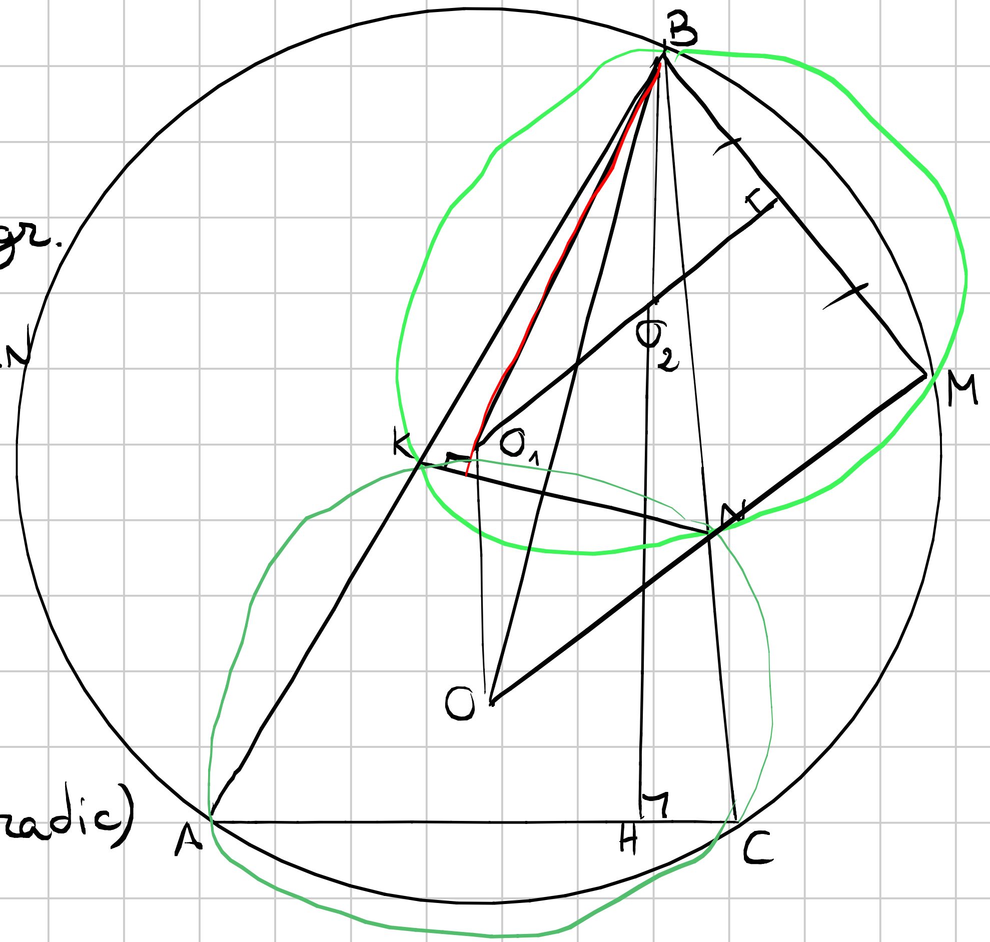
ΔKNC è cicl

$CBH = 90 - ACB$

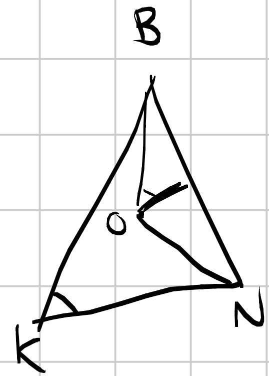
$OO_1 \parallel BO_2$

$O_1B \parallel OO_2$

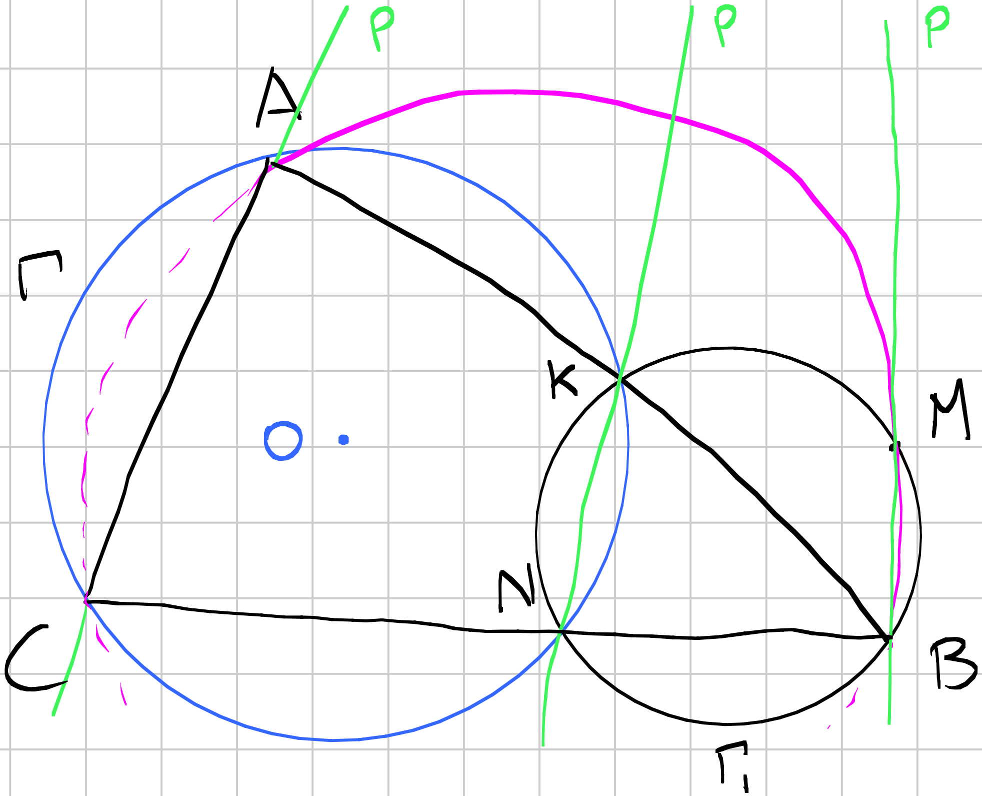
$OO_2 \perp KN$ (asse radic)



$KBO_1 = 90 - \gamma$ $\quad$ $NKB = \gamma$



M.



Tesi : $OM \perp MB$

1° fatto : i 3 assi radicali si incontrano in un p.to P.

Tesi $\iff$

$OP^2 - PM^2 = OB^2 - BM^2$

$OP^2 - OB^2 = PM^2 - BM^2$

$\boxed{\text{Tesi} \iff BK \cdot BA - PM \cdot MB = BM^2}$

$OP^2 = Pow_\Gamma(P) + R^2$

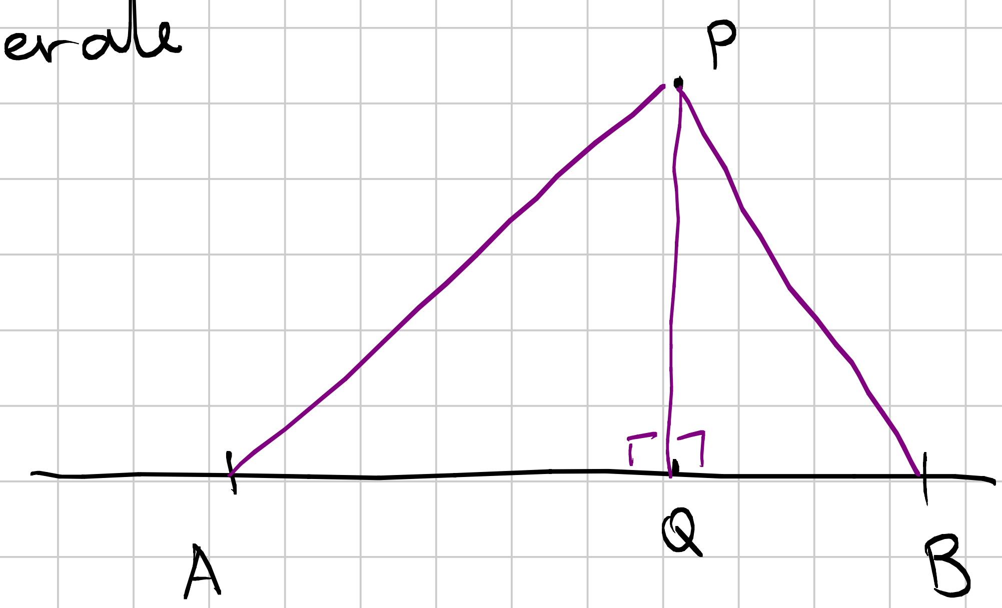
$OB^2 = Pow_\Gamma(B) + R^2$

$OP^2 - OB^2 = Pow_\Gamma(P) - Pow_\Gamma(B) = Pow_{\Gamma_1}(P) - Pow_\Gamma(B) =$

$= PM \cdot (PM + MB) - BK \cdot BA$

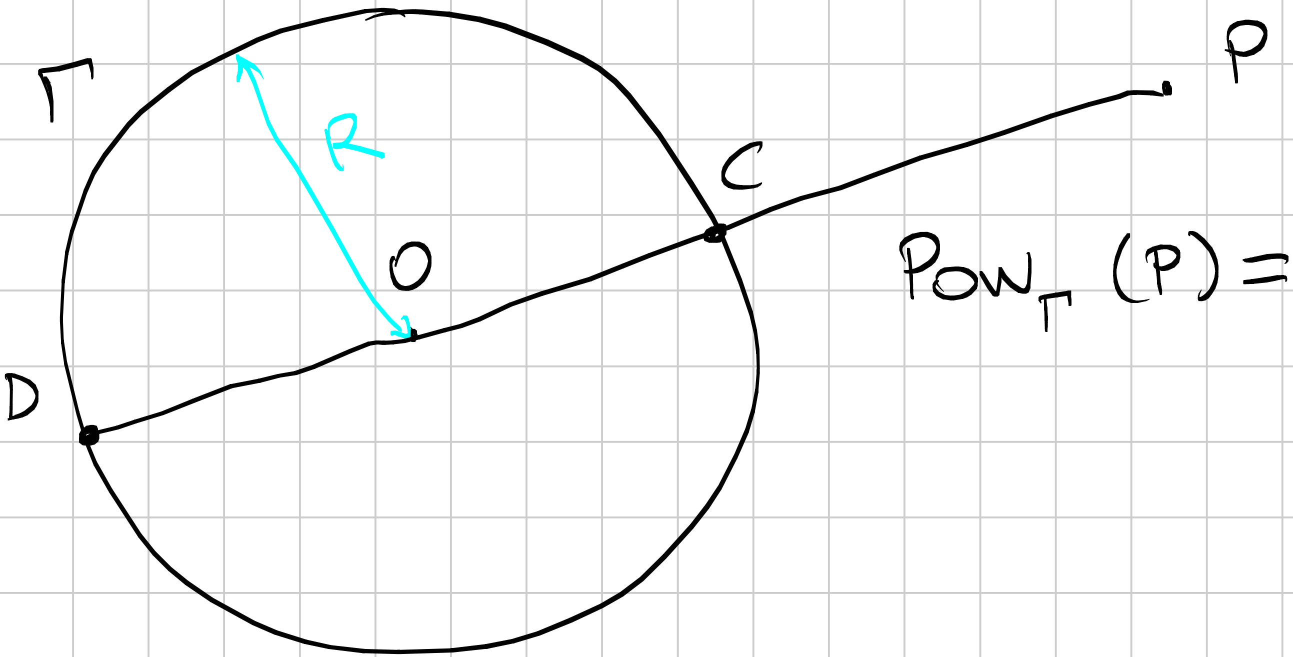
$PM^2 + PM \cdot MB$

2° fatto generale



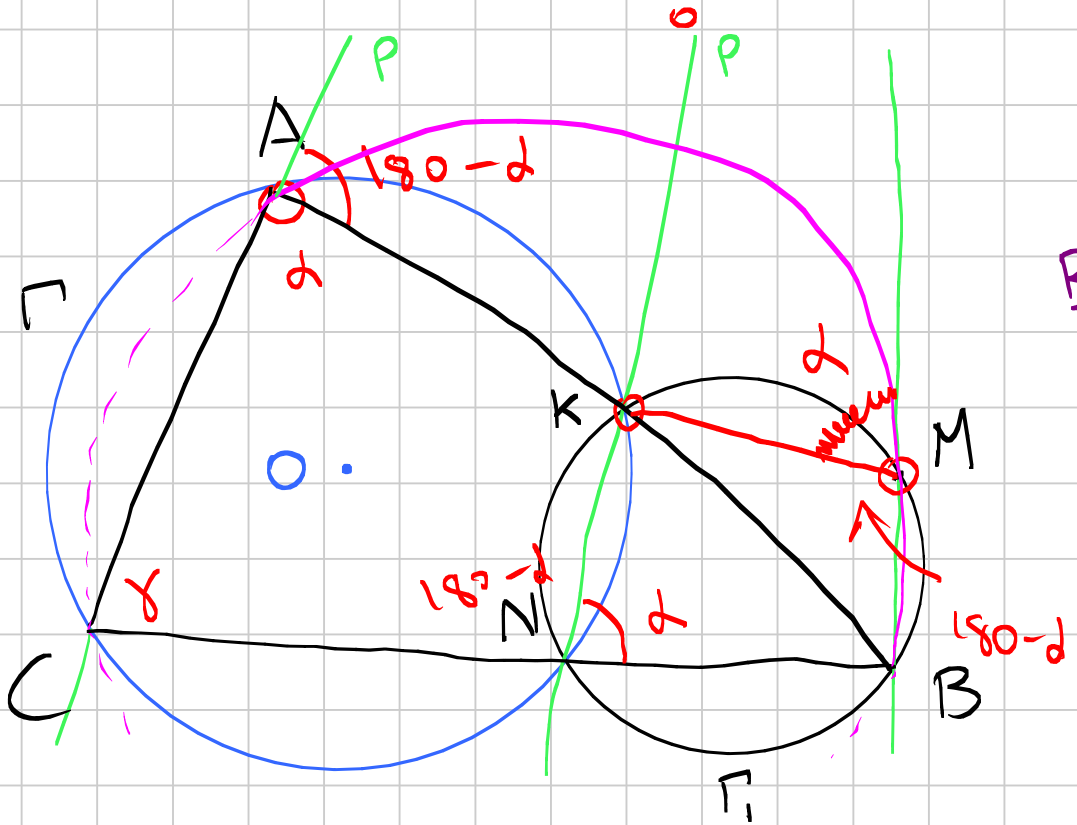
$$PQ \perp AB \iff \underbrace{AP^2 - AQ^2}_{PQ^2} = \underbrace{BP^2 - BQ^2}_{PQ^2}$$

$$AP^2 - BP^2 = AQ^2 - BQ^2$$



$$\mathrm{Pow}_{\Gamma}(P) = PO^2 - R^2$$

$$CP \cdot PD = (PO - R)(PO + R)$$



$BK \cdot BA - PM \cdot MB = BM^2$

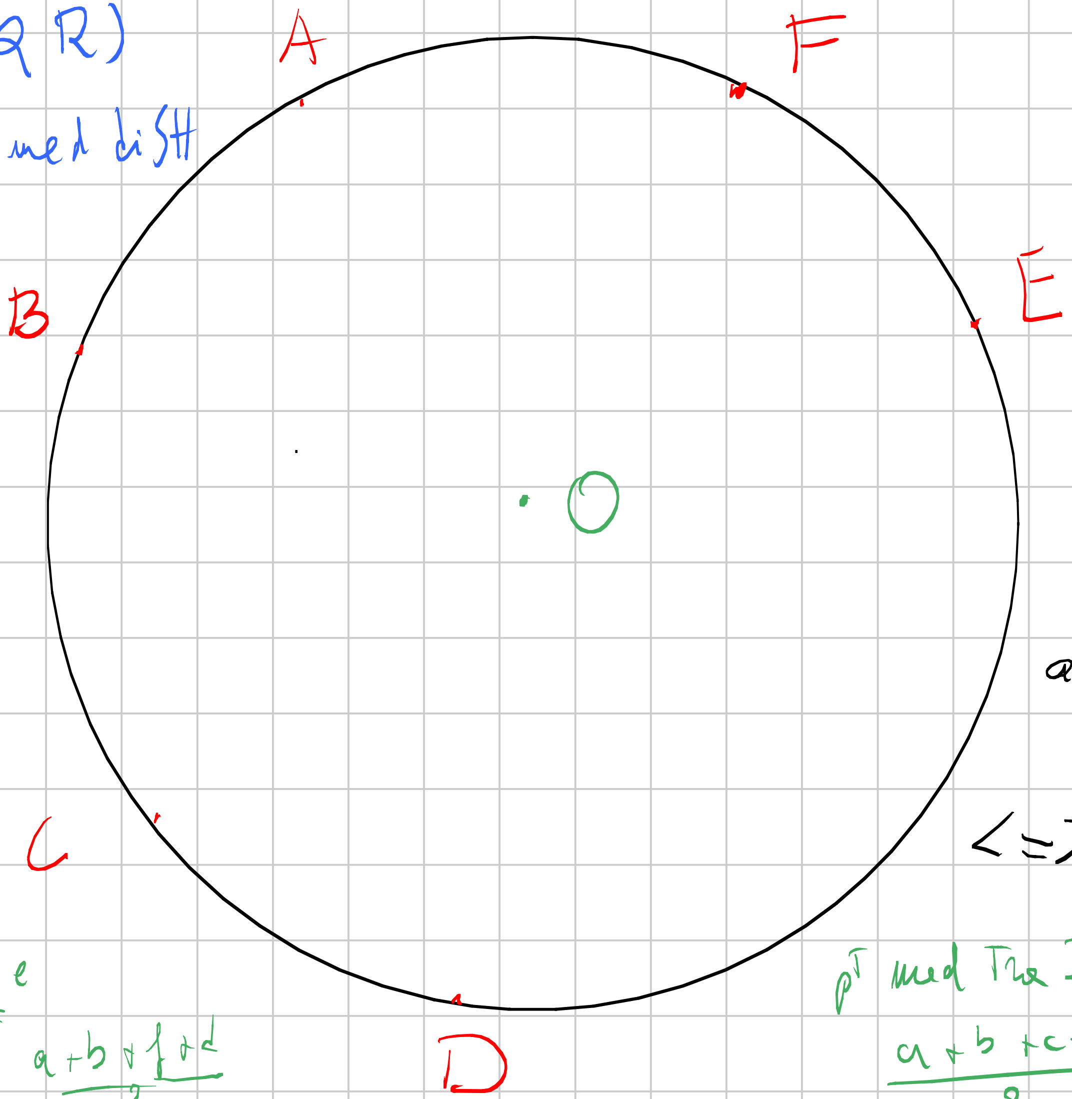
$BK \cdot BA = BM\,(BM + PM)$

$BK \cdot BA = BM \cdot PB$

Tesi $\Longleftrightarrow$ AKMP ciclico

$r = (S; PQR)$

$r \cap S$ H = pt med di SH



b) $CDEF$ rettangolo

$\Updownarrow$

$(A; BDF)$ $(B; ACE)$
$(D; ABF)$ $(E; ABC)$
concorrono.

$\Updownarrow$

$a+b+d+f = a+b+c+e$

$c - d = f - e$

$\Leftrightarrow$ $CDEF$ parallelogramma

$\overline{\text{ba}}$centro di BDF

$\vec{b}+\vec{d}+\vec{f}$

$$\frac{\vec{a}+\vec{b}+\vec{d}+\vec{f}}{2}$$

pt. med tra D e b^{no} di ABF $\dfrac{a+b+f+d}{2}$

pt med tra B e b^{no} di ACE = pt med tra E e b^{no} di ABC

$$\frac{a+b+c+e}{2}$$