

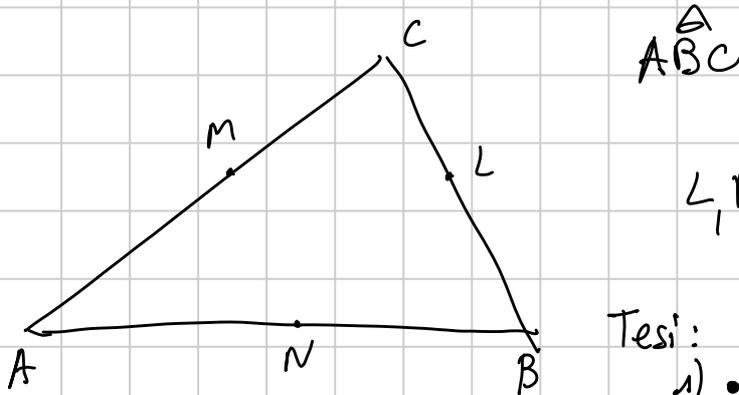
Stage di TERNI - (25-01-2010)

Titolo nota

pomeriggio

25/01/2011

Geometria 2



$\triangle ABC$

L, M, N p. f. medi dei lati

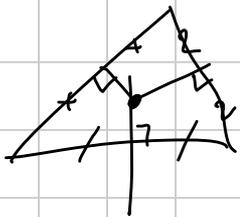
Tesi:

1) • $\triangle LMN \sim \triangle ABC$

2) • i due triangoli hanno lo stesso baricentro

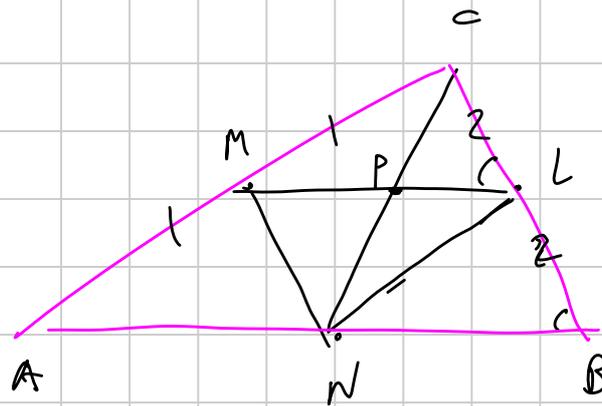
3) • il circocentro di $\triangle ABC$ è l'ortocentro di $\triangle LMN$

circocentro: punto di incontro degli assi



e ortocentro: p.to di incontro delle altezze

CN è mediana per MNL



$$CL = LB$$

$$CM = MA$$

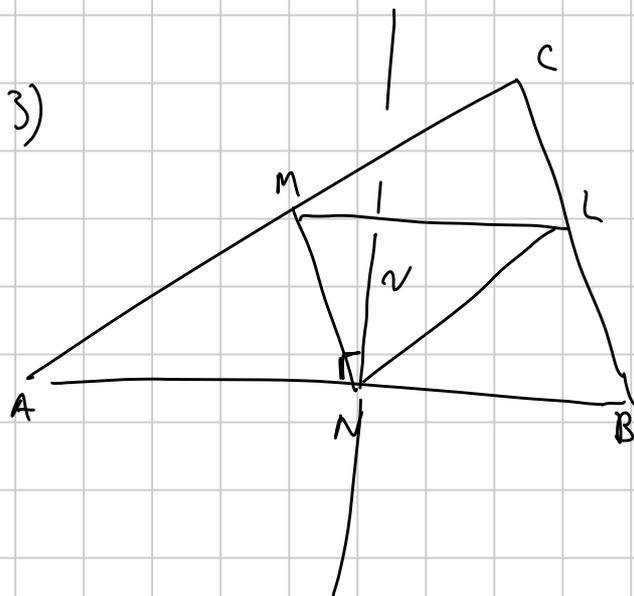
$\triangle MCL \sim \triangle ABC$
(etc...)

1)
$$\left. \begin{array}{l} \text{Taletto} \Rightarrow ML \parallel AB \\ MN \parallel BC \\ NL \parallel AC \end{array} \right\} \Rightarrow \triangle MNL \sim \triangle ABC$$

e $\overline{ML} = \frac{1}{2} \overline{AB}$

2)
$$\triangle CPL \sim \triangle CNB, \triangle CMP \sim \triangle CAN$$

 $AN = NB \Rightarrow MP = PL \Rightarrow P \text{ è mediana di } \triangle MNL$



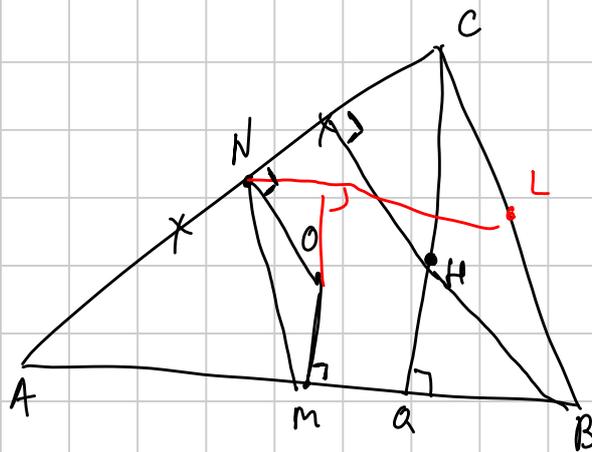
gli assi di $\triangle ABC$
sono le altezze
di $\triangle MNL$

\downarrow
 r asse di AB

• $r \perp AB$ e $AB \parallel ML$
 $\Rightarrow r \perp ML$

• r passe per N
 \downarrow

r è l'altessa di
 MNL relative a ML



O circocentro
H ortocentro
M p.to medio
di AB

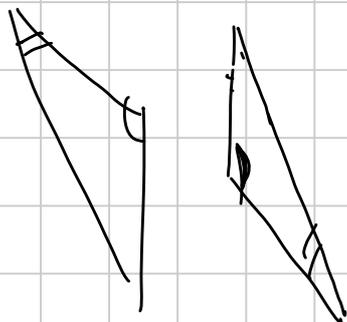
Tesi

$$2OM = CH$$

N p.to medio di AC

Hint: Guardare $\triangle NOM$... e $\triangle CHB$

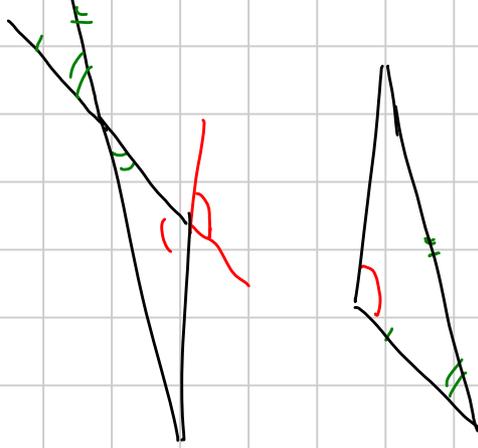
- $NM \parallel CB$ (visto prima)
- OM e $CQ \perp AB \Rightarrow OM \parallel CQ$
 $ON \parallel BH$



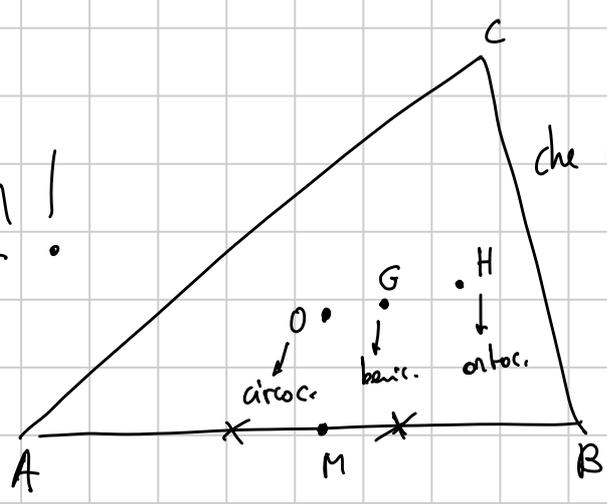
\downarrow
letti \parallel e due a due
 \downarrow

$\triangle NOM \sim \triangle BHC$

$$2 = \frac{BC}{NM} = \frac{HC}{OM} \Rightarrow \underline{CH = 2OM}$$



Ricordarsi
che $CH = 2OM$!

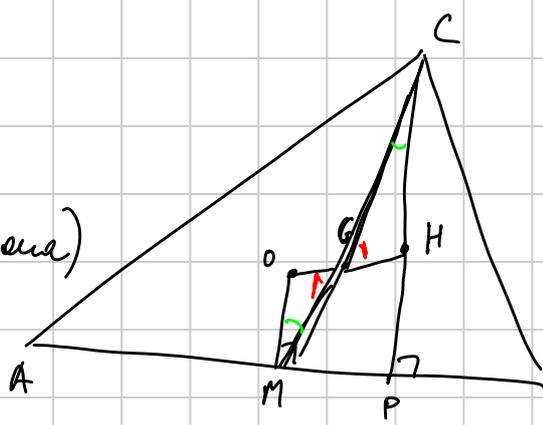


Dimostrare
che circocentro, baricentro
e ortocentro
sono allineati
(retta di Eulero)

$$GH = 2OG$$

Aiutino: l'allineamento è equivalente a $\triangle OGM \sim \triangle HGC$.

C, G, M sono
allineati (mediana)



$OM \parallel CH$

$$\hat{O}MG = \hat{G}CH$$

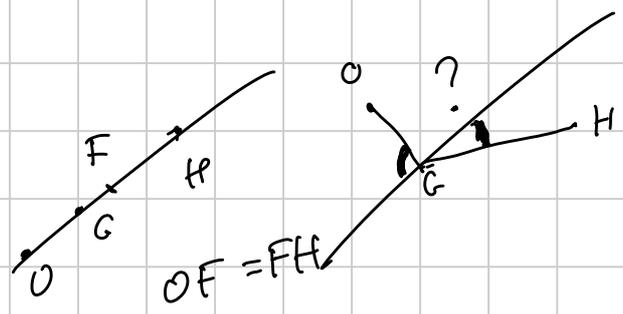
- $CH = 2OM$
- $CG = 2GM$

II criterio

$$\triangle OGM \sim \triangle HGC$$

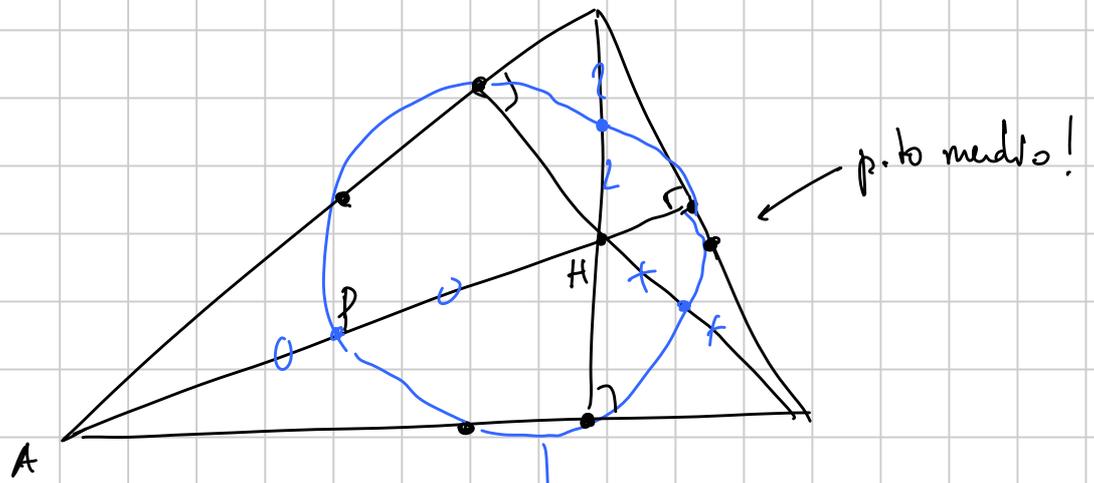
$$\hat{O}GM = \hat{G}CH \Rightarrow O, G, H \text{ allineati}$$

O, G, H
allineati



$$2OG = GH$$

$$2 = \frac{CH}{OM} = \frac{GH}{OG}$$



$AP=PH$

Circonfenza
di FEUERBACH