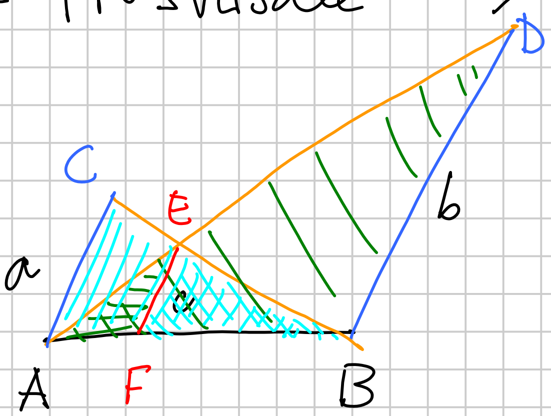
GEOMETRIA

Titolo nota 06/12/2009

Proprietà delle rette // tagliate da una trasversale → similitudini



$AC \parallel BD$

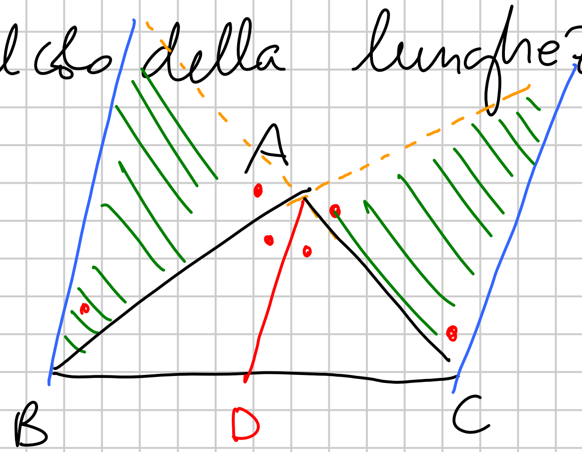
EF parallelo ad entrambi

$$\frac{c}{b} = \frac{AF}{AB} \qquad \frac{c}{a} = \frac{FB}{AB}$$

$$\frac{c}{b} + \frac{c}{a} = \frac{AF}{AB} + \frac{FB}{AB} = \frac{AB}{AB} = 1$$

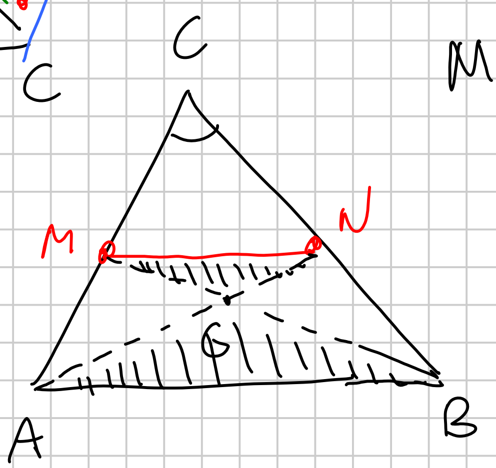
$$c\left(\frac{1}{a} + \frac{1}{b}\right) = 1 \qquad \frac{1}{c} = \frac{1}{a} + \frac{1}{b}$$

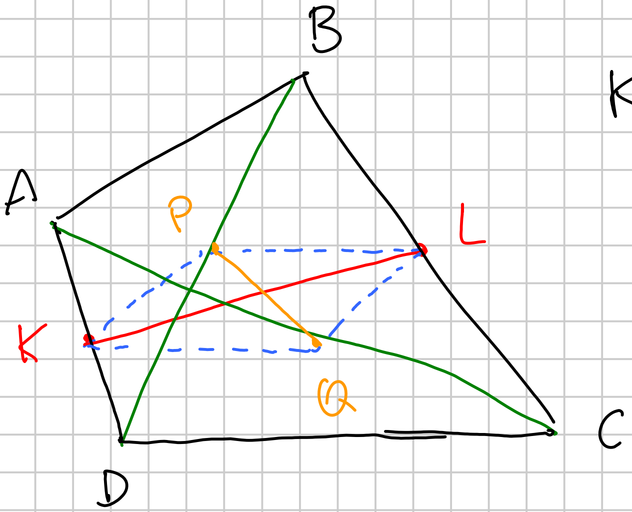
Calcolo della lunghezza di una bisettrice



$B\hat{A}C = 120^\circ$

$\overset{\triangle}{MNC}$ è simile a $\overset{\triangle}{ABC}$





KL biseca PQ

$\Updownarrow$

KQLP è un parallelogrammo

in $\overset{\triangle}{ADB}$ $\quad KP = \frac{1}{2}AB \quad KP \parallel AB$

in $ACB \quad QL = \frac{1}{2}AB \quad QL \parallel AB$

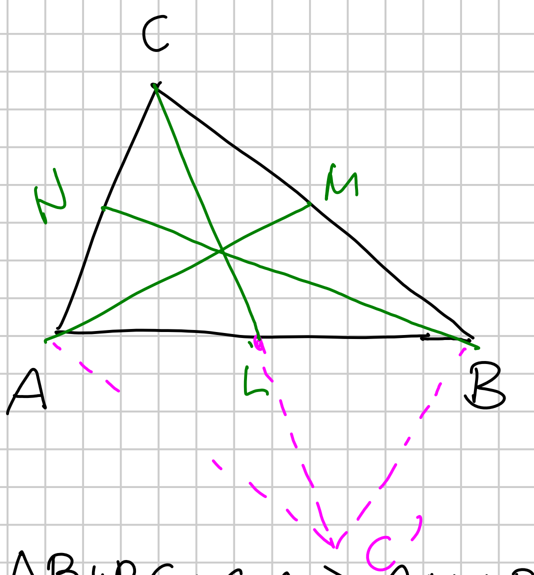
$KP = QL$

$KP \parallel QL$

Luoghi geometrici

Asse di un segmento

Diseg. triangolare



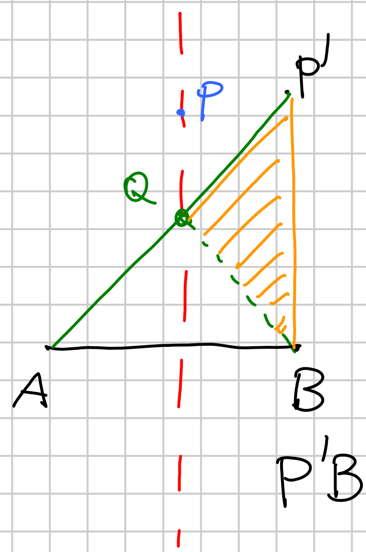
$AB + BC + CA > AM + BN + CL$

$2CL < AC + CB$

$2AM < AB + AC$

$2BN < AB + BC$

$2(CL + AM + BN) < 2(AB + AC + BC)$



$PA = PB$

$P'B < P'A$

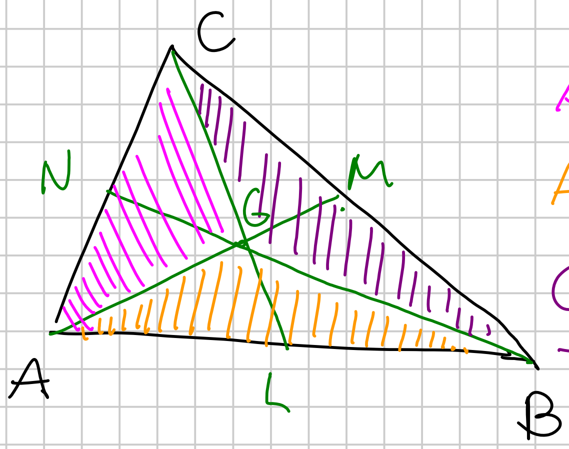
$QA = QB$

$P'B < P'Q + \underset{\overset{\parallel}{QA}}{QB}$

$P'B < P'A$

$\nearrow$

$AB + AC + BC > CL + AM + BN$



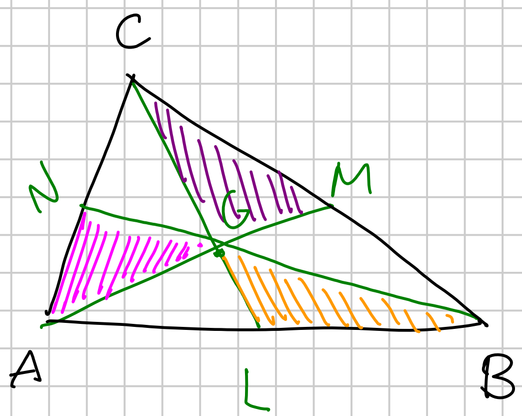
$$AG + GC > AC$$
$$AG + GB > AB$$
$$CG + GB > CB$$

$$2(AG + GB + CG) > AC + AB + CB$$

$$AG = \frac{2}{3} AM$$
$$CG = \frac{2}{3} CL$$
$$BG = \frac{2}{3} BN$$

$$\frac{4}{3}(AM + CL + BN) > AC + AB + CB$$

$$AM + CL + BN > \frac{3}{4}(AC + AB + CB)$$



$$\Rightarrow AG < \underbrace{\frac{1}{2} AC}_{AN} + GN$$
$$BG < \frac{1}{2} AB + GL$$
$$CG < \frac{1}{2} CB + GM$$

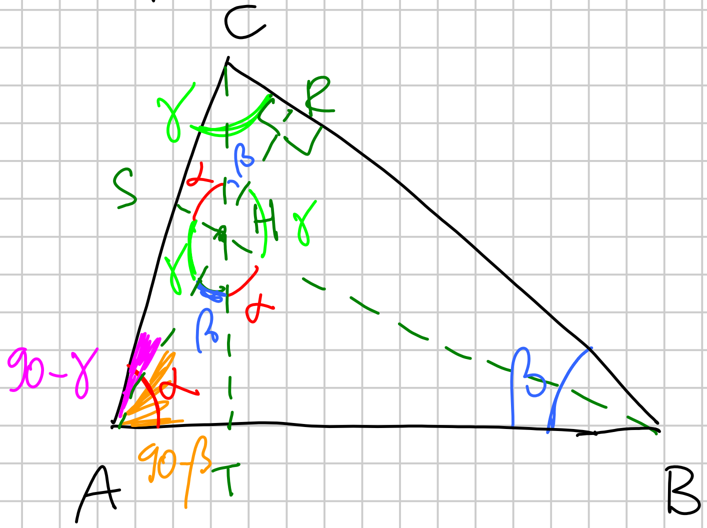
$$AG + BG + CG < \frac{1}{2}(AB + BC + AC) + GN + GL + GM$$

$$\frac{2}{3}(AM + BN + CL) < \frac{1}{2}(AB + BC + AC) + \frac{1}{3}(AM + BN + CL)$$

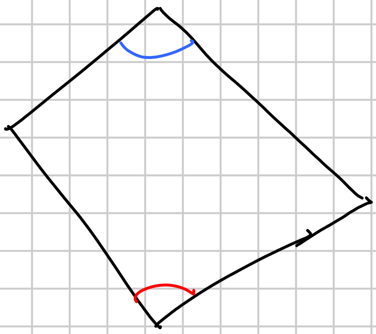
$$(CL + BN + AM) < \frac{3}{2}(AC + AB + CB)$$

ORTO CENTRO

$\alpha+\beta+\gamma=180°$

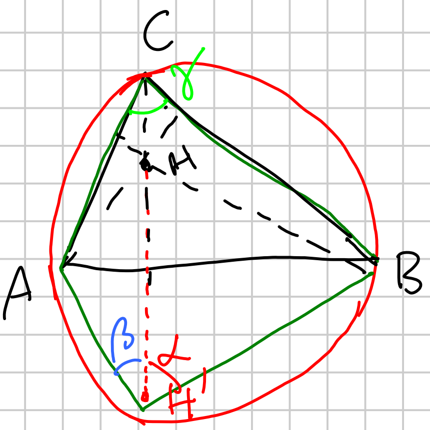


QUADRILATERI CICLICI

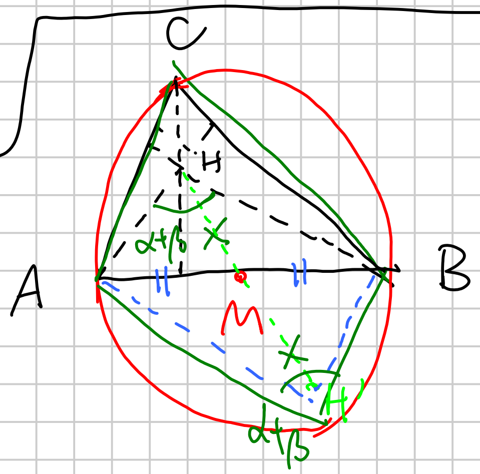


$+ = 180°$

(1)



$A\hat{H'}B + A\hat{C}B = \alpha+\beta+\gamma=180°$



$AM = MB$

(2)

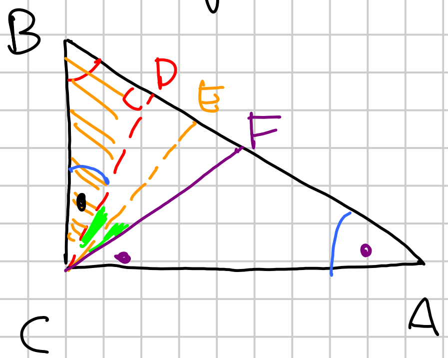
$AHBH'$ è un parallelogramma

$AH'BC$ è ciclico

$H' \in$ circonf. circoscritta

$H'^{(2)}$ è il simmetrico di $H'^{(1)}$ rispetto all'asse di AB

$\overset{\triangle}{ABC}$ rettangolo in C



CD = altezza

CE = bisettrice

CF = mediana

$\Rightarrow D\hat{C}E = E\hat{C}F$

$BF = CF = FA$

$C\hat{B}A = 90 - B\hat{C}D$

$C\hat{B}A = 90 - C\hat{A}B$

$B\hat{C}D = C\hat{A}B$