

GEOMETRIA

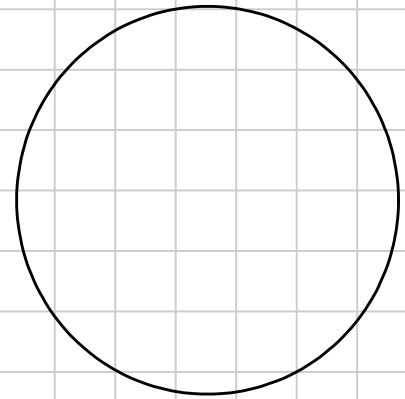
Titolo nota

13/02/2014



"sporcarsi le mani"

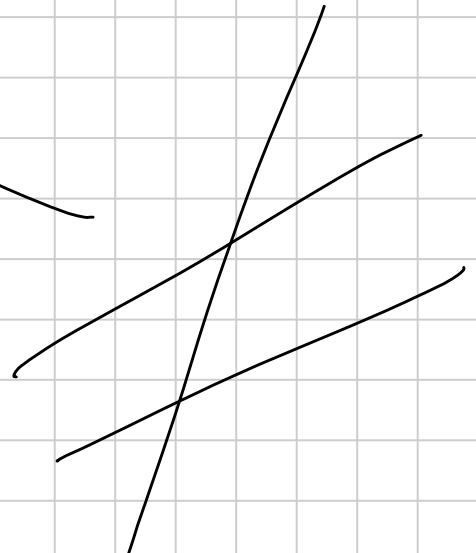
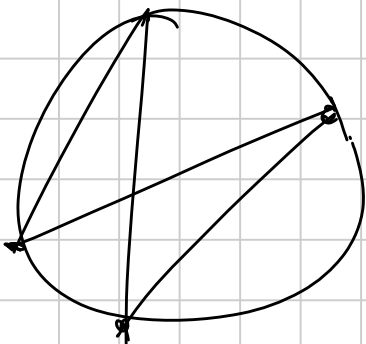
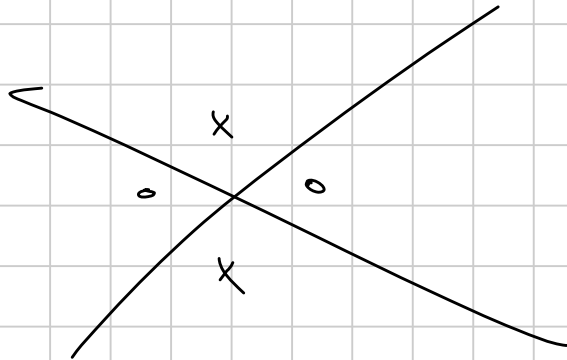
→ portare il compasso

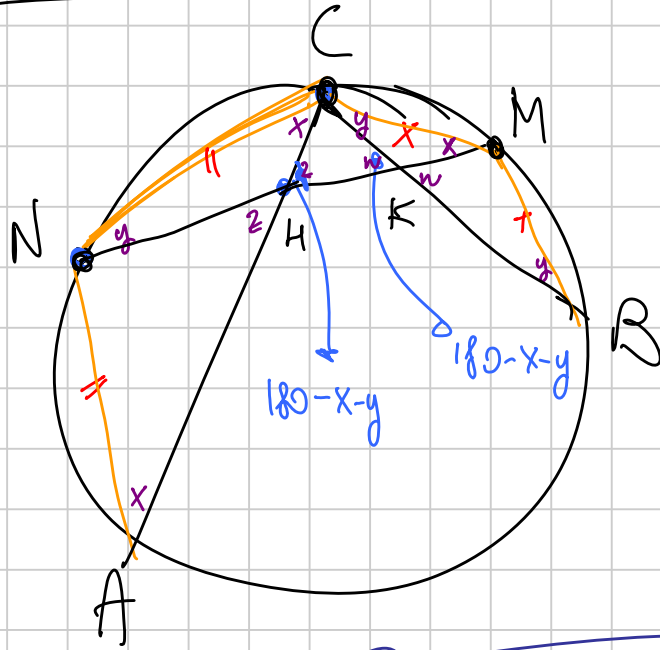


$$x^2 - y^2 + 5 = 2$$

$$x^2 - 3 = y^2$$

"andar per angoli"

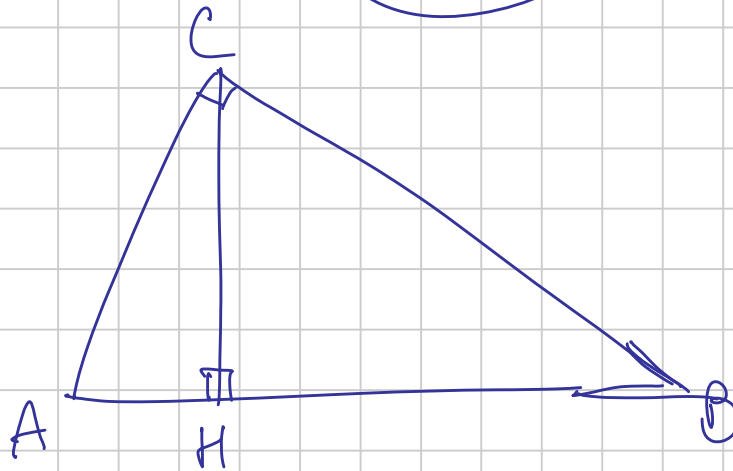
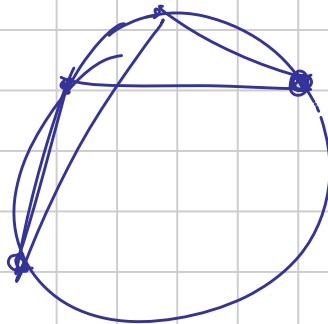




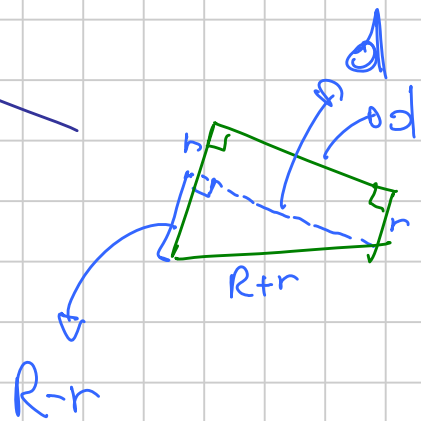
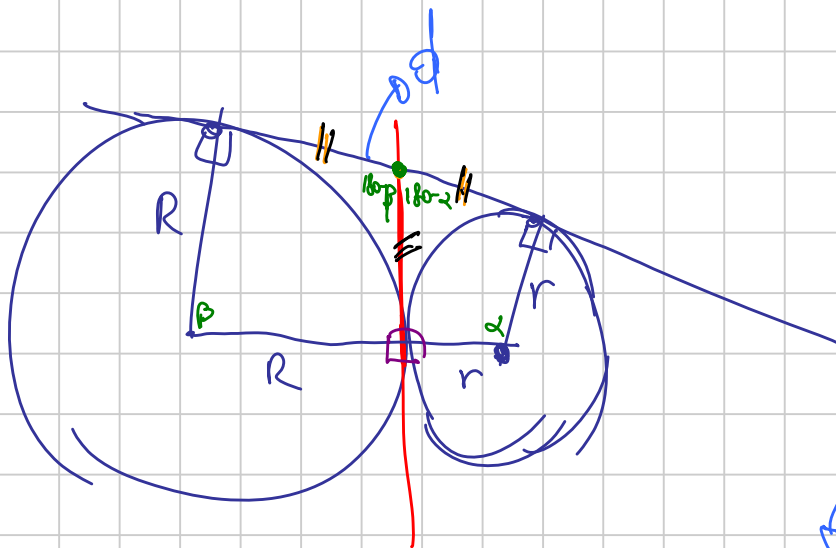
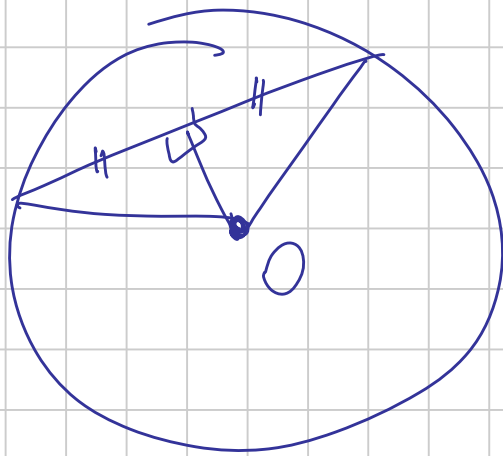
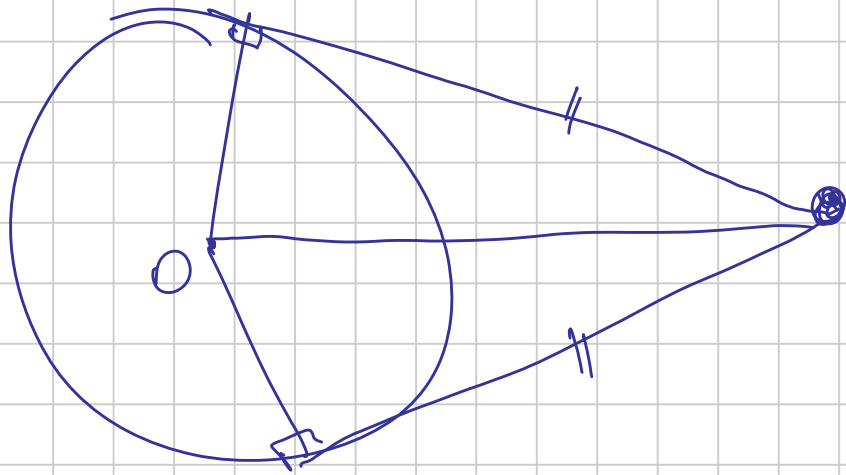
$H_p: \dots$

Th: CHK isoscele

Riconoscere
configurazioni note

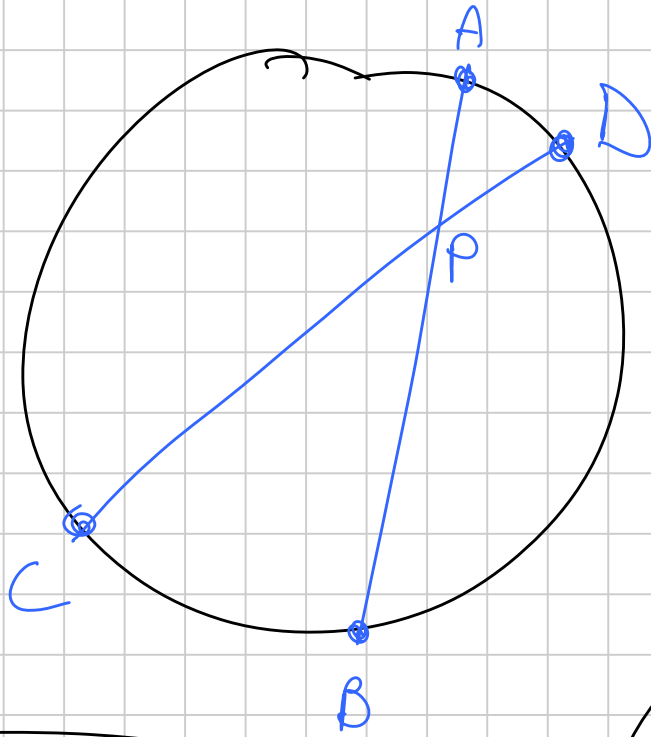


$$CAB \cong HCA \cong HBC$$

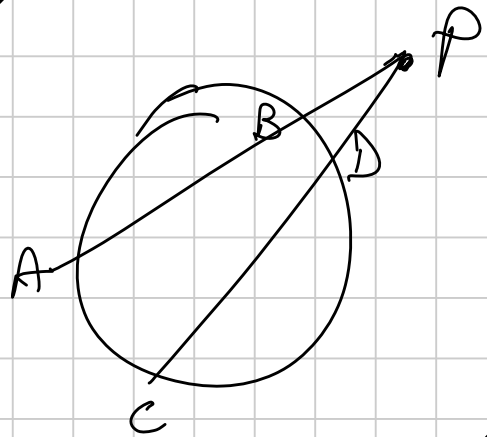


$$d^2 = (R+r)^2 - (R-r)^2 = 4Rr$$

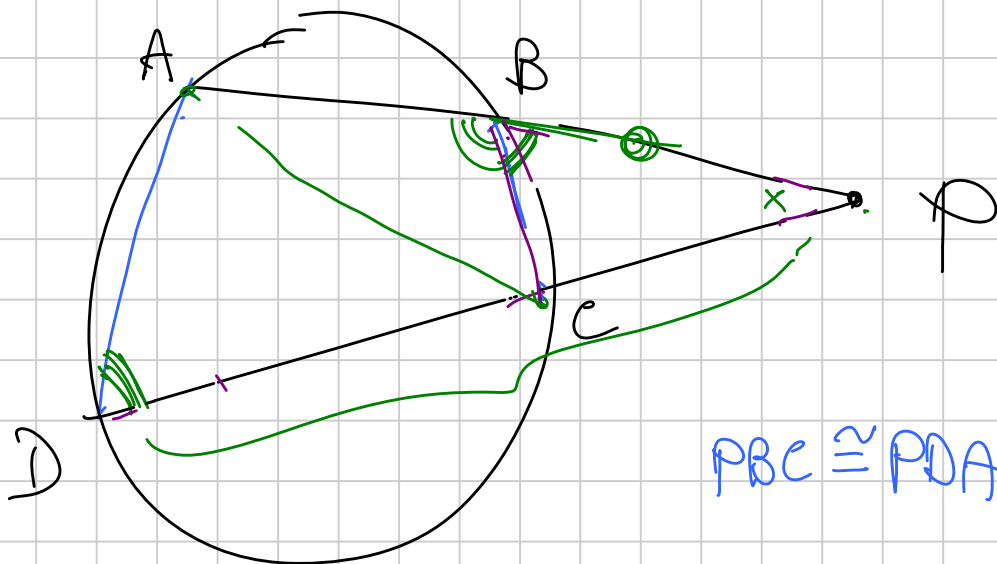
"Risultato"



$$\frac{PC}{PA} = \frac{PB}{PD}$$



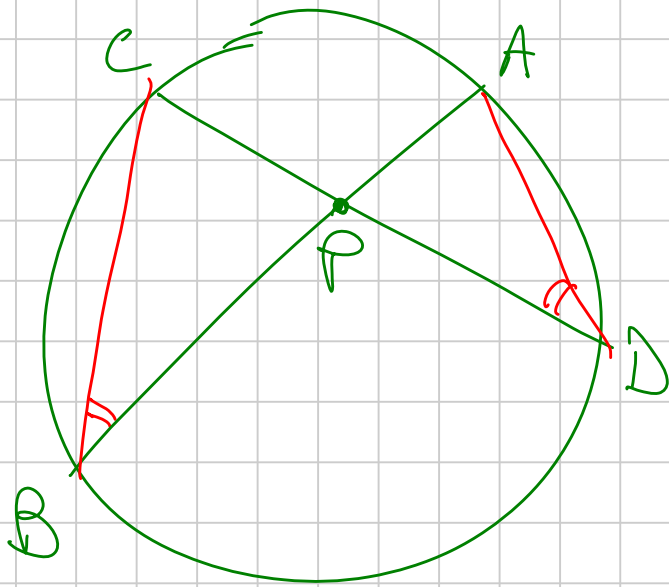
Potenza di un punto
rispetto a una circonferenza



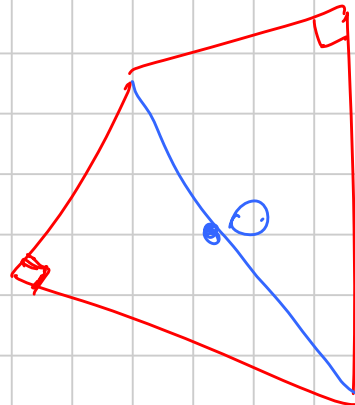
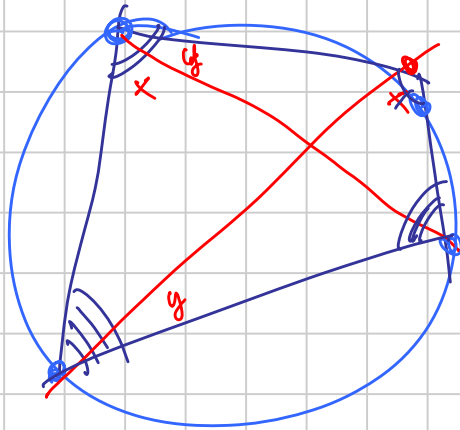
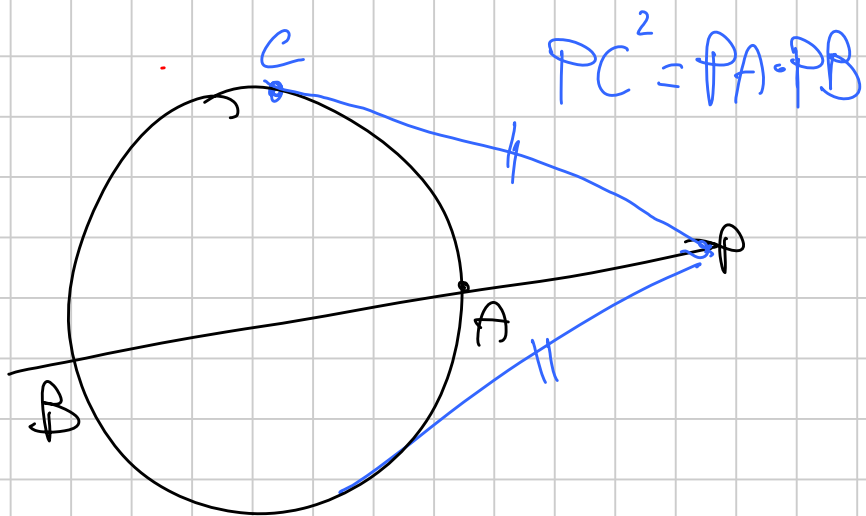
$$PBC \cong PDA$$

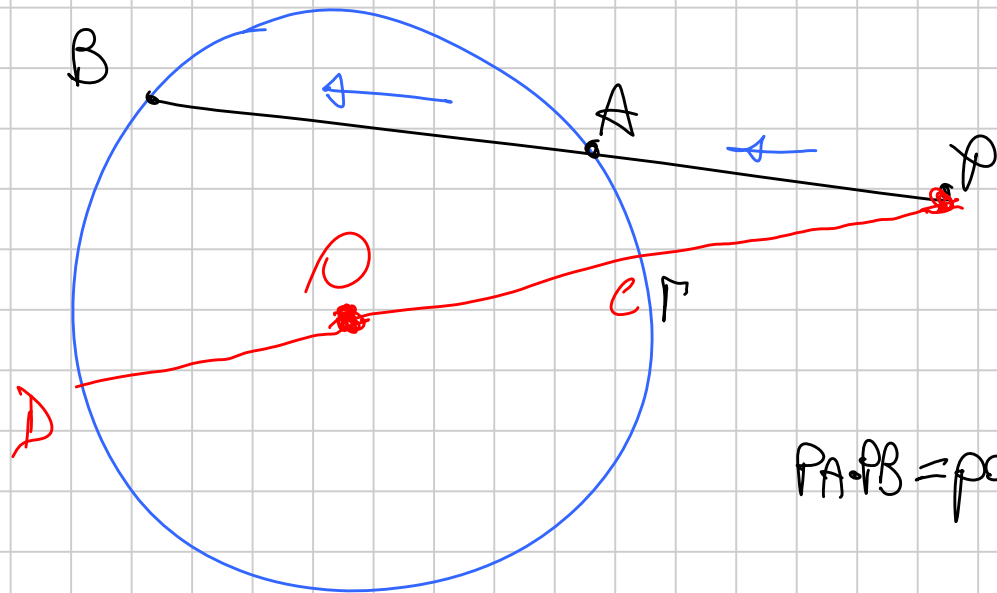
Allora $PC \cdot PD = PB \cdot PA$

$$\frac{PC}{PB} = \frac{PA}{PD}$$



$$PC \cdot PD = PA \cdot PB$$



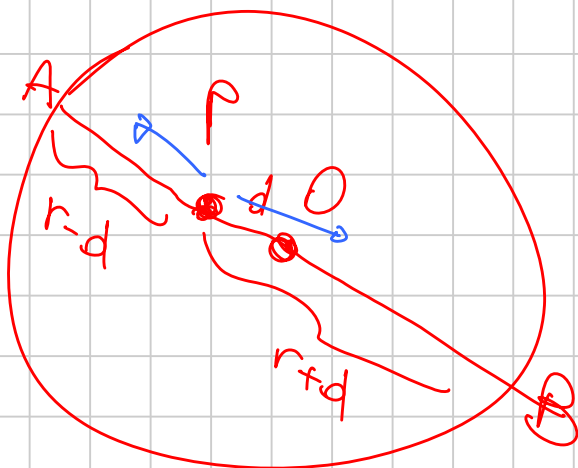


$$PA \cdot PB = \text{pow}_r P$$

Def/Teo: $\text{pow}_r P \stackrel{\text{def}}{=} PA \cdot PB$, e non dipende dalla scelta della retta

$d = \text{distanza } PO$ $r = \text{raggio circ.}$

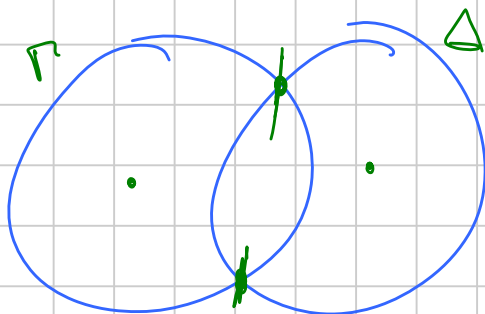
$$\text{pow}_r P = (d-r)(d+r) = d^2 - r^2$$



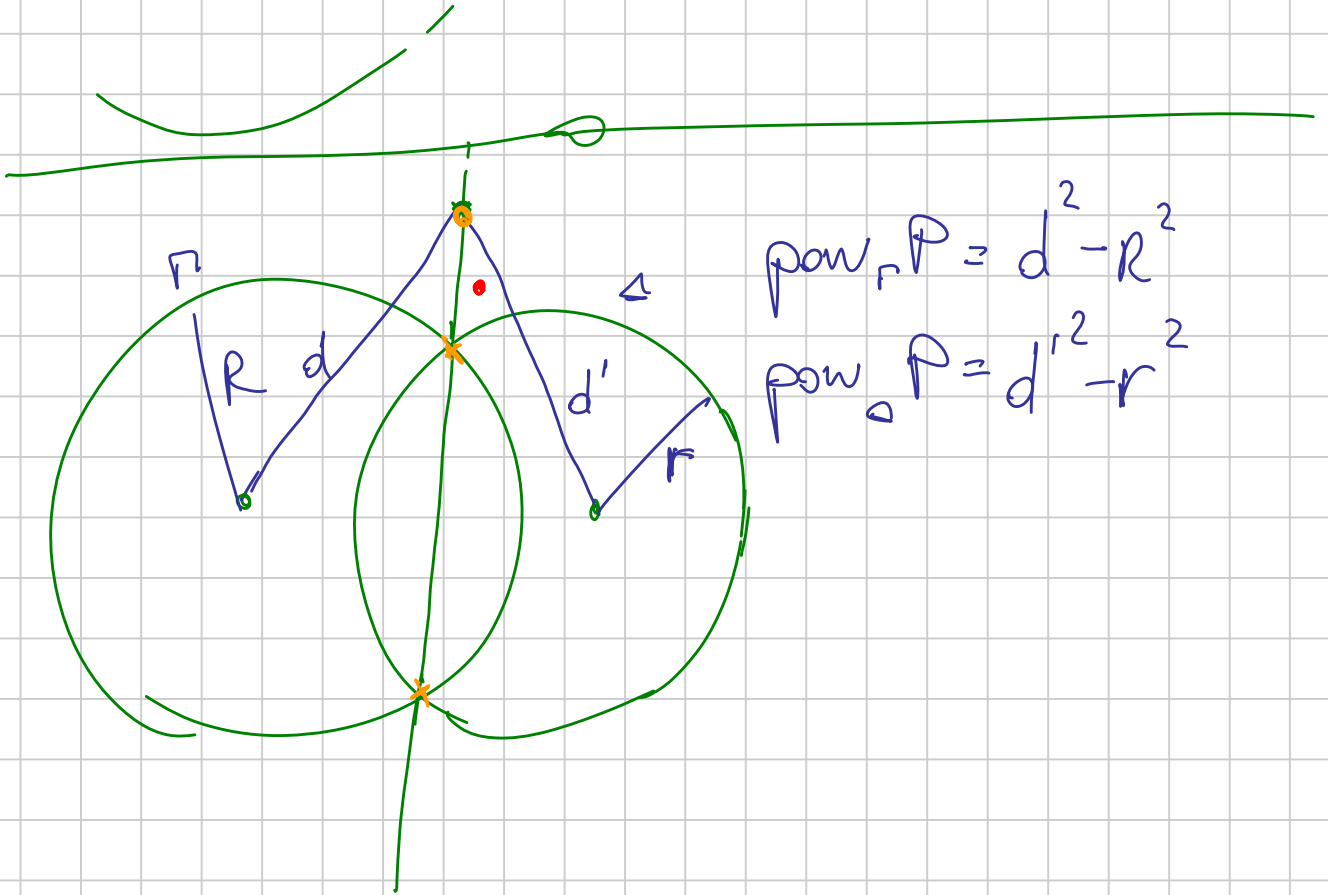
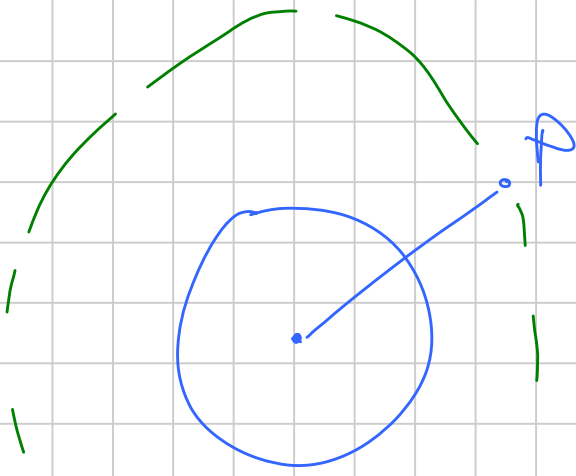
Resta vera anche per P interno se prendiamo

$$\text{pow}_r P = -PA \cdot PB$$

ok se consideriamo "distanze con segno"

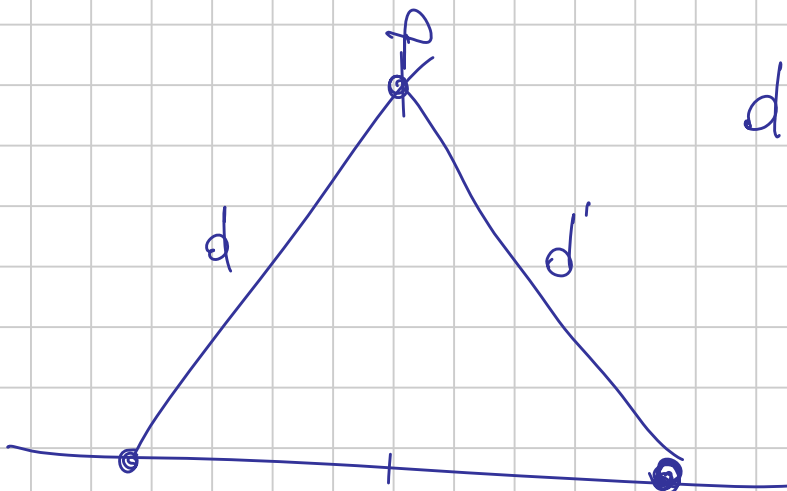


Quali sono i P per cui $\text{pow}_{r_1} P = \text{pow}_{r_2} P$?

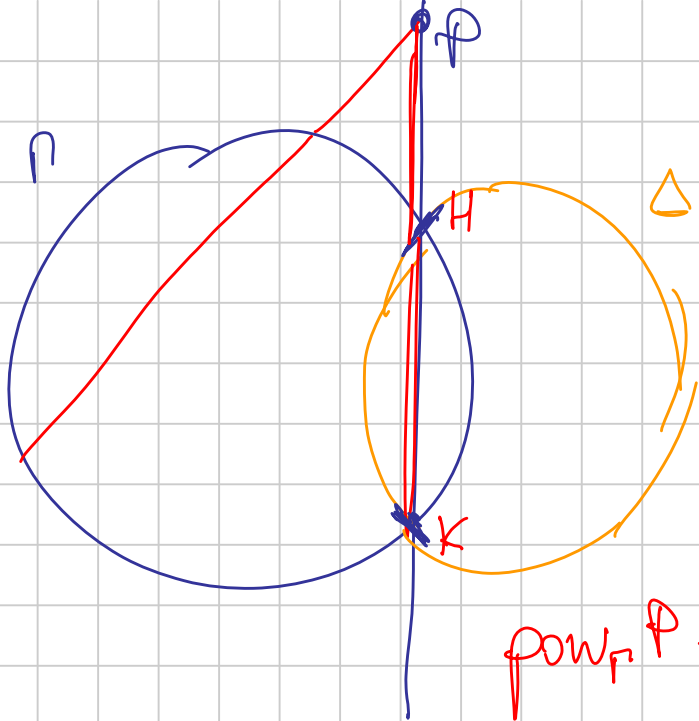


$$\text{pow}_R P = d^2 - R^2$$

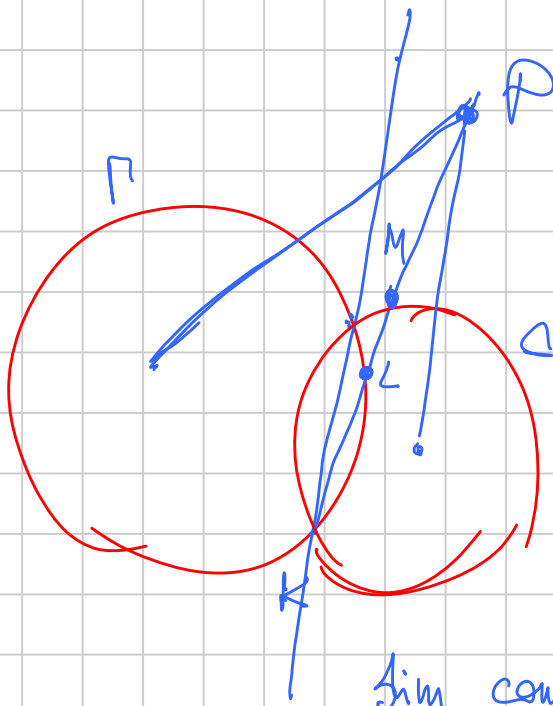
$$\text{pow}_{O'} P = d'^2 - r^2$$



$d = d' \Leftrightarrow P$ sta sull'asse del segmento



$$\text{pow}_{\Gamma} P = PH \cdot PK = \text{pow}_{\Delta} P$$

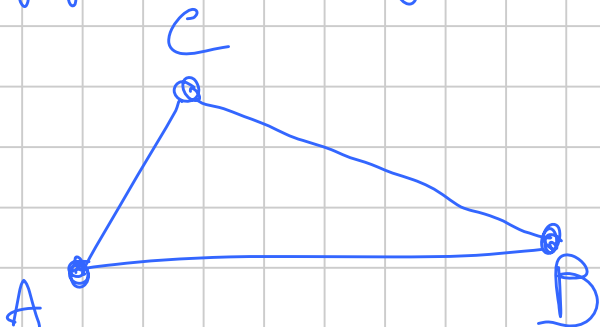


$$\text{pow}_{\Gamma} P = PL \cdot PK$$

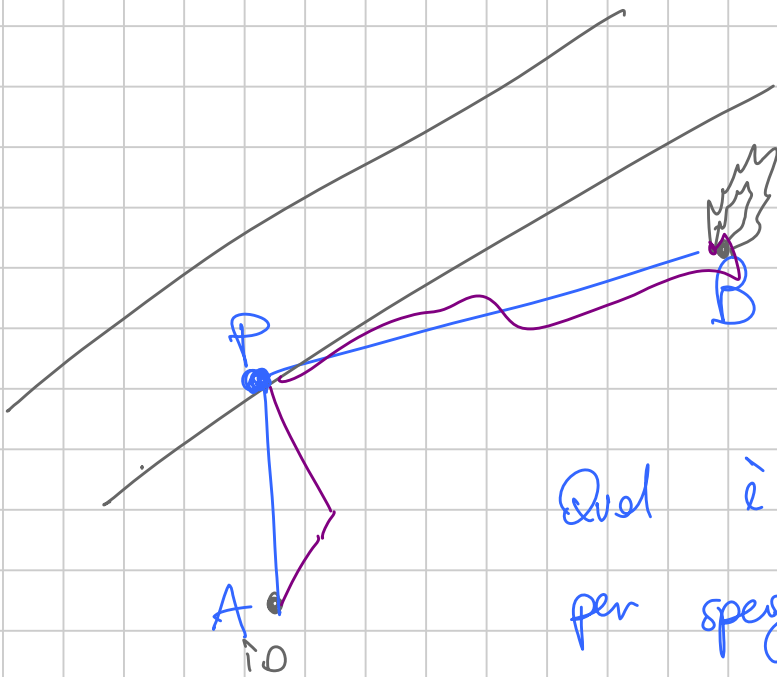
$$\text{pow}_{\Delta} P = PM \cdot PK$$

sim. completa ($\Leftarrow \Rightarrow$)

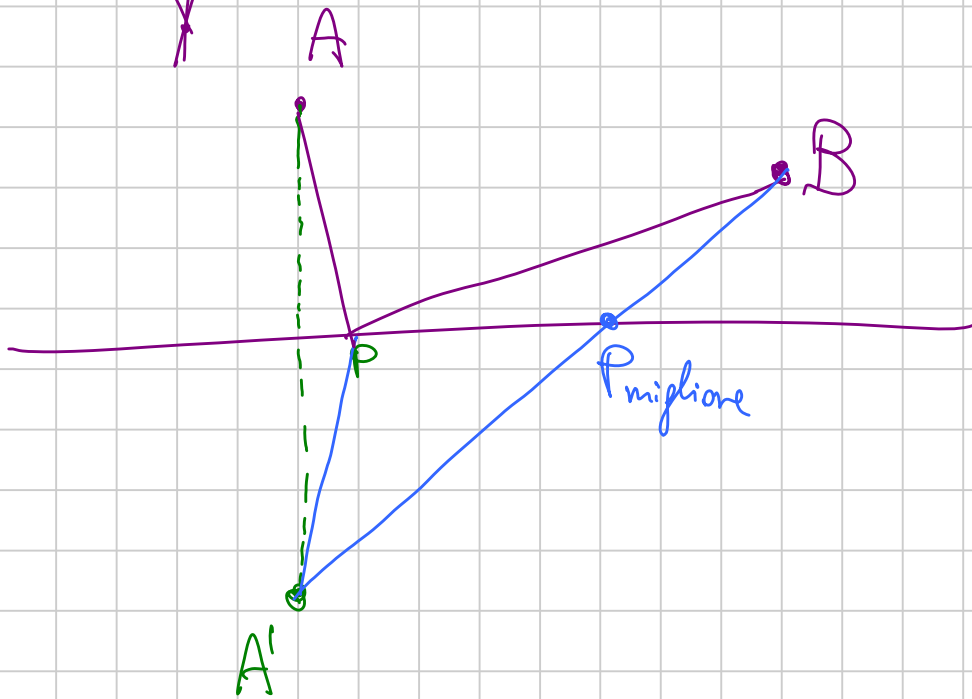
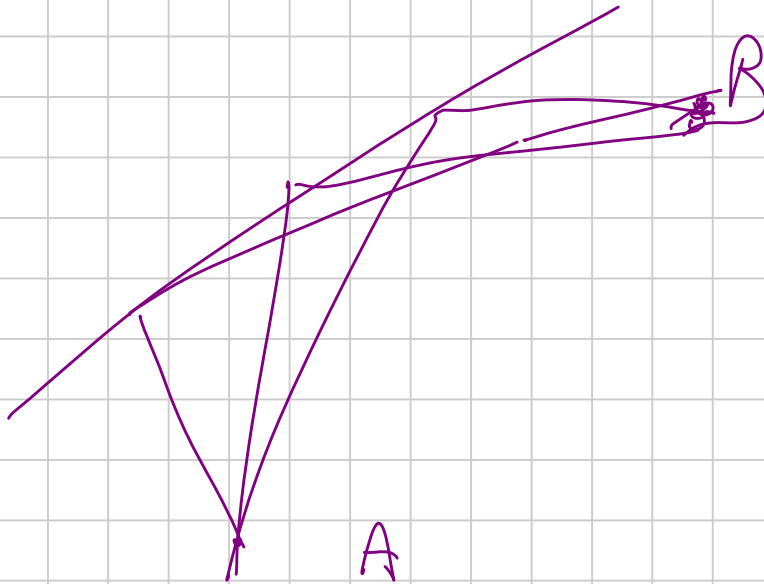
disuguaglianza triangolare

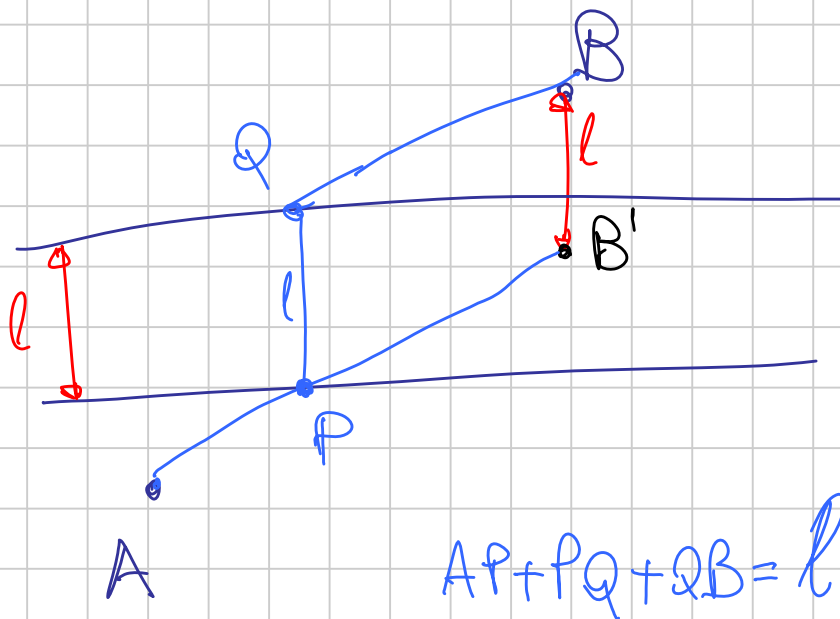
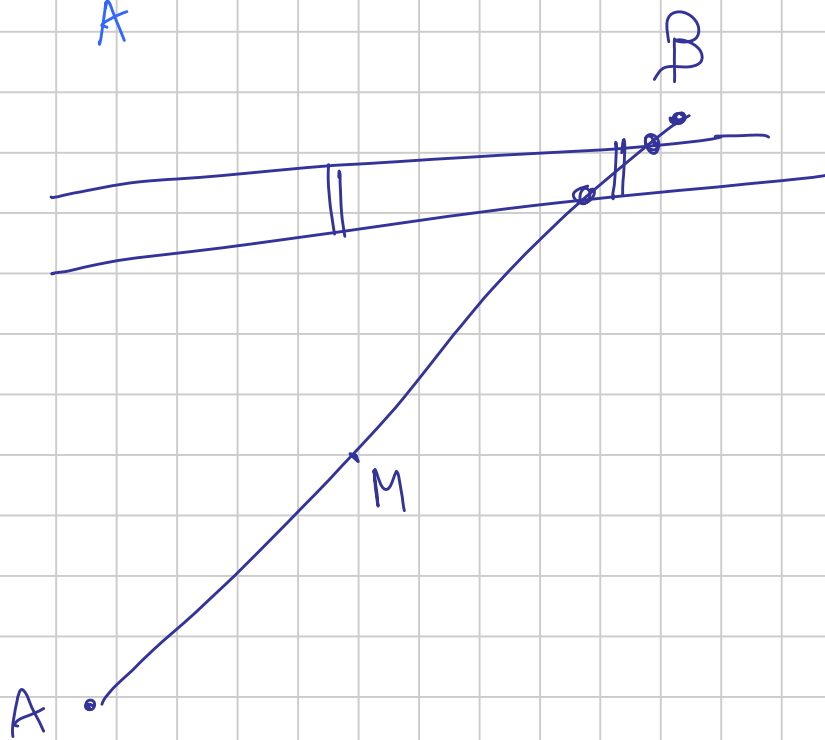
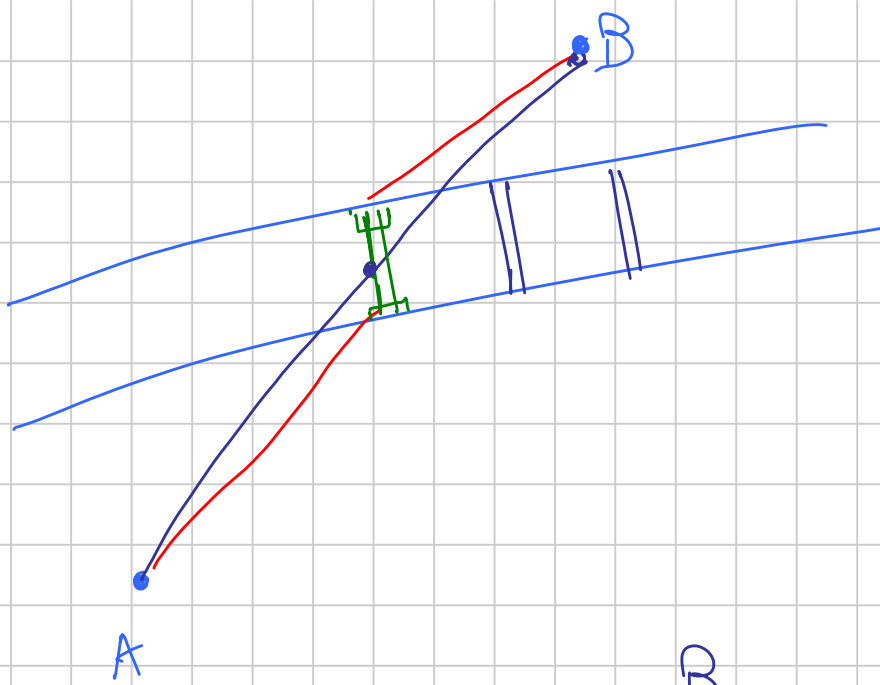


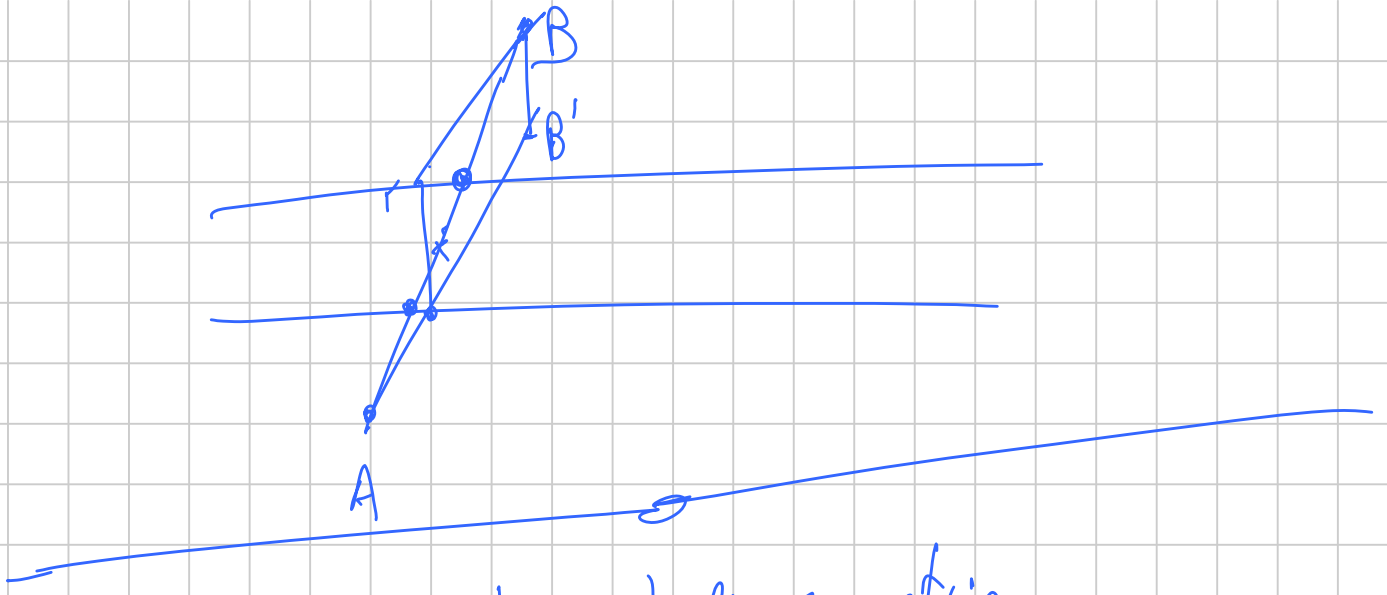
$$AB = AC + CB$$



Qual è la strada più veloce per spegnere l'incendio?

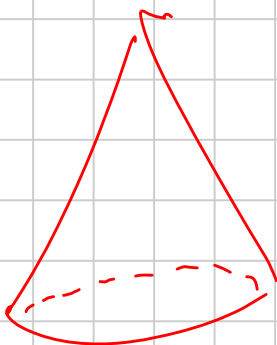
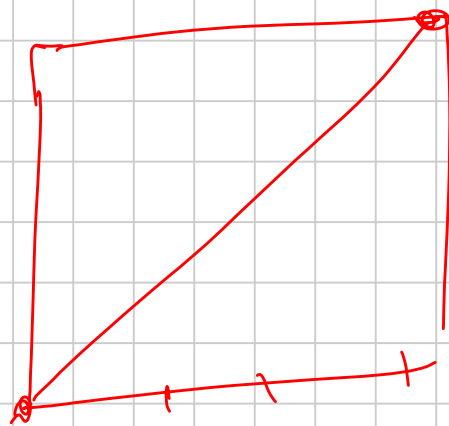
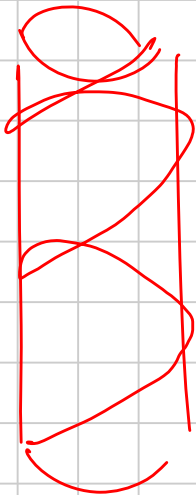
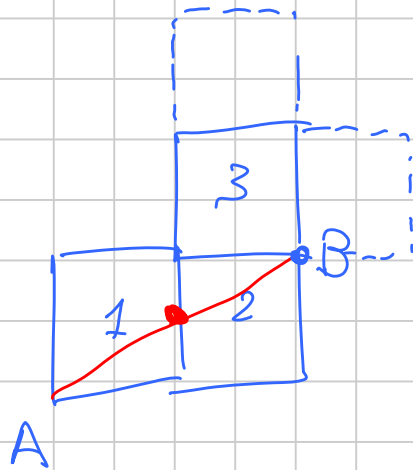
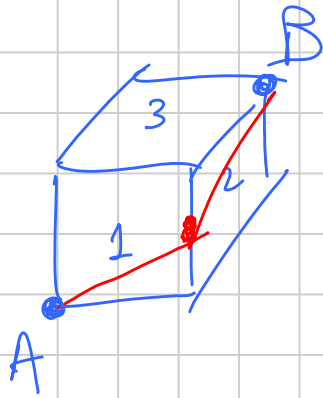




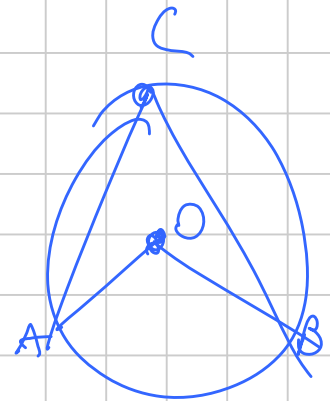
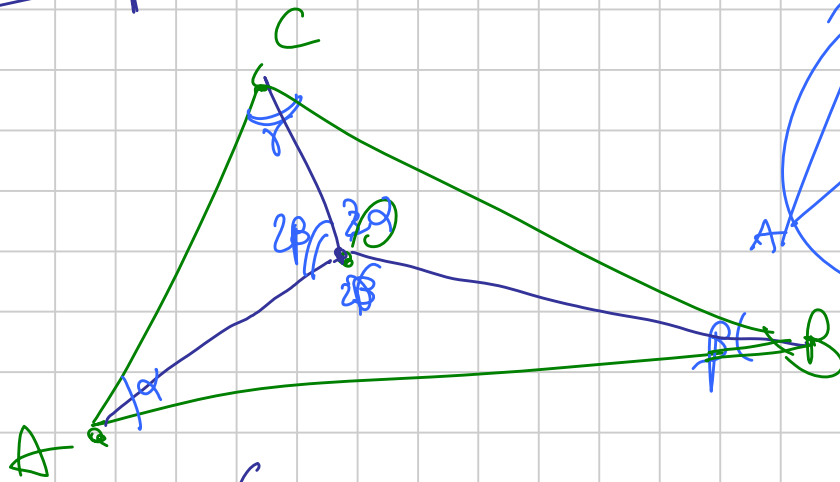
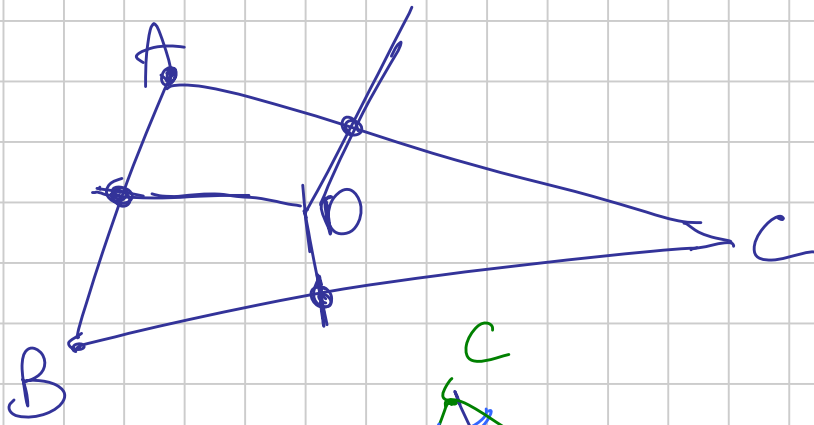
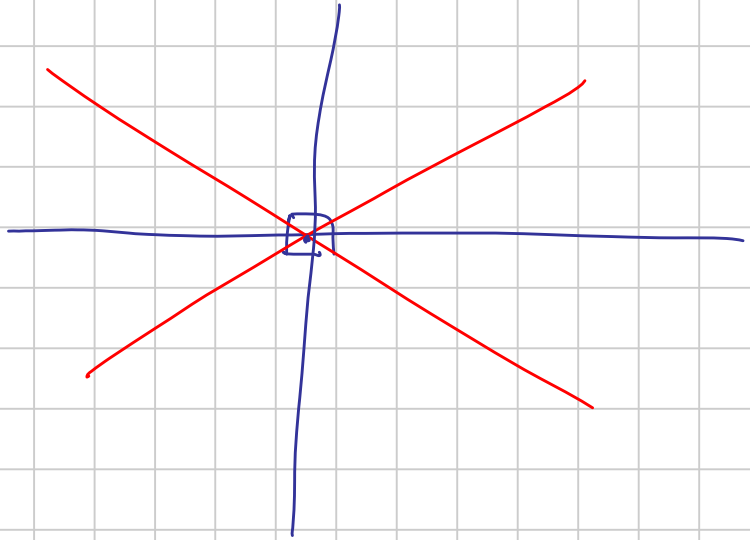
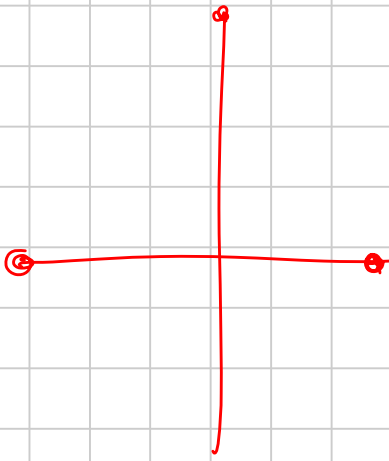


prendere punti, spordinati, simmetrie

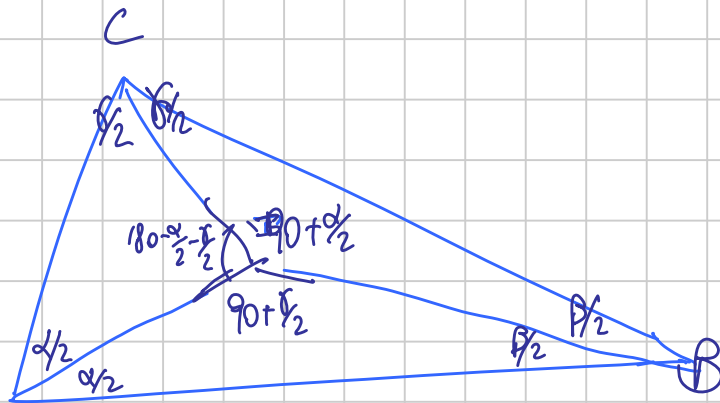
GEOMETRIA SOLIDA



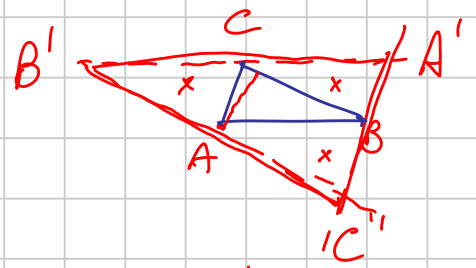
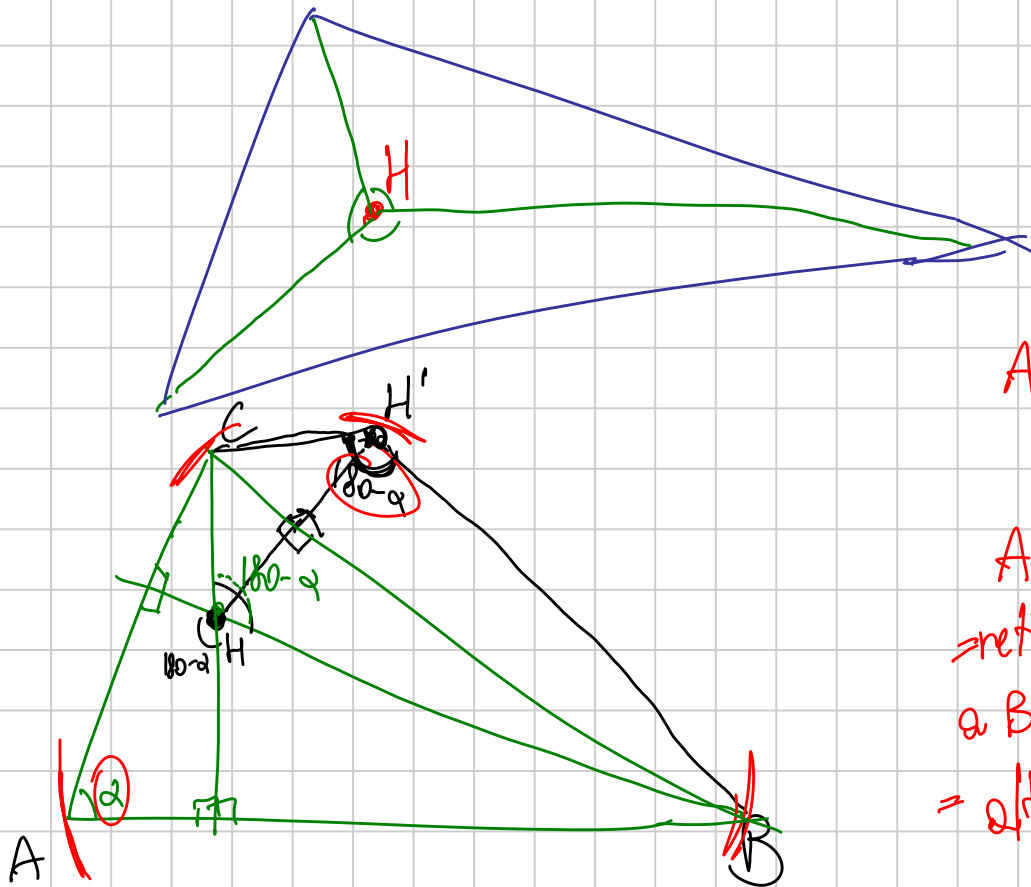
Sfere: non si srotola



ACTI triangolo



$$180 - \frac{\alpha}{2} - \frac{\beta}{2} = 180 - \frac{\alpha + \beta}{2} = 180 - \frac{180 - \gamma}{2} = 90 + \frac{\gamma}{2}$$



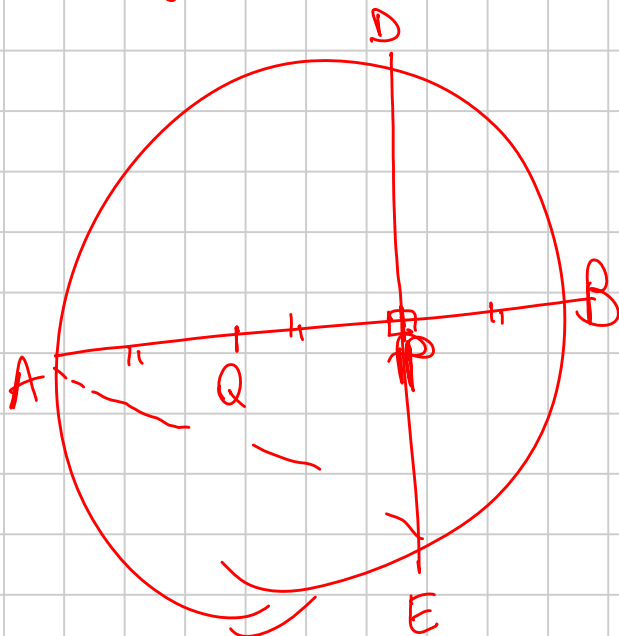
$A'B'C'$ è
due volte ABC

$AB'C$, $A'BC$, ABC'
sono uguali a ABC

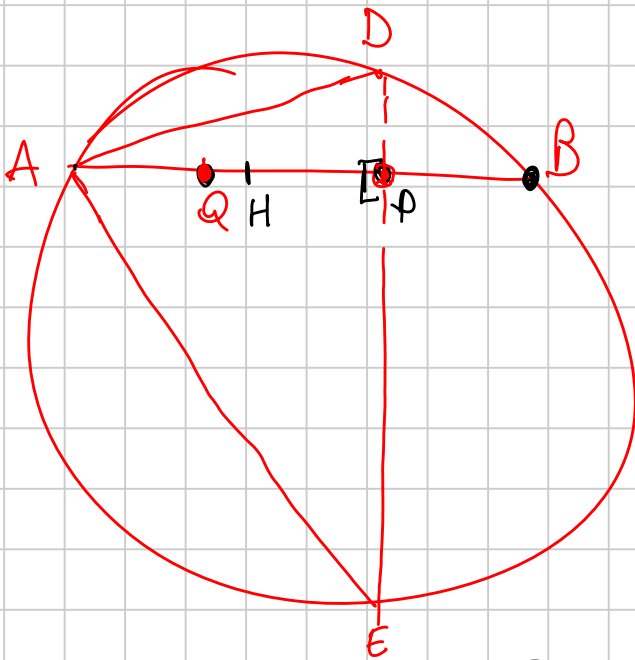
Asse di $B'C' =$
 \Rightarrow retta perpendicolare
a BC passante per A
 $=$ altezza di ABC

Il Simmetrico dell'ortocentro rispetto a un lato sta
sulla circ. circoscritta al triangolo

Feb 2008



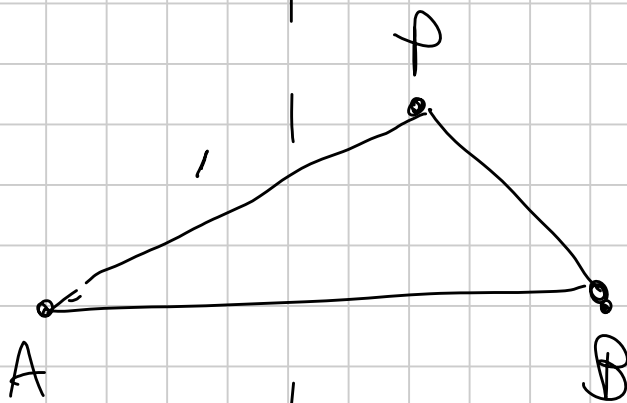
Th Q è l'ortocentro di
 ADE



B è il simmetrico di H
risp. DE

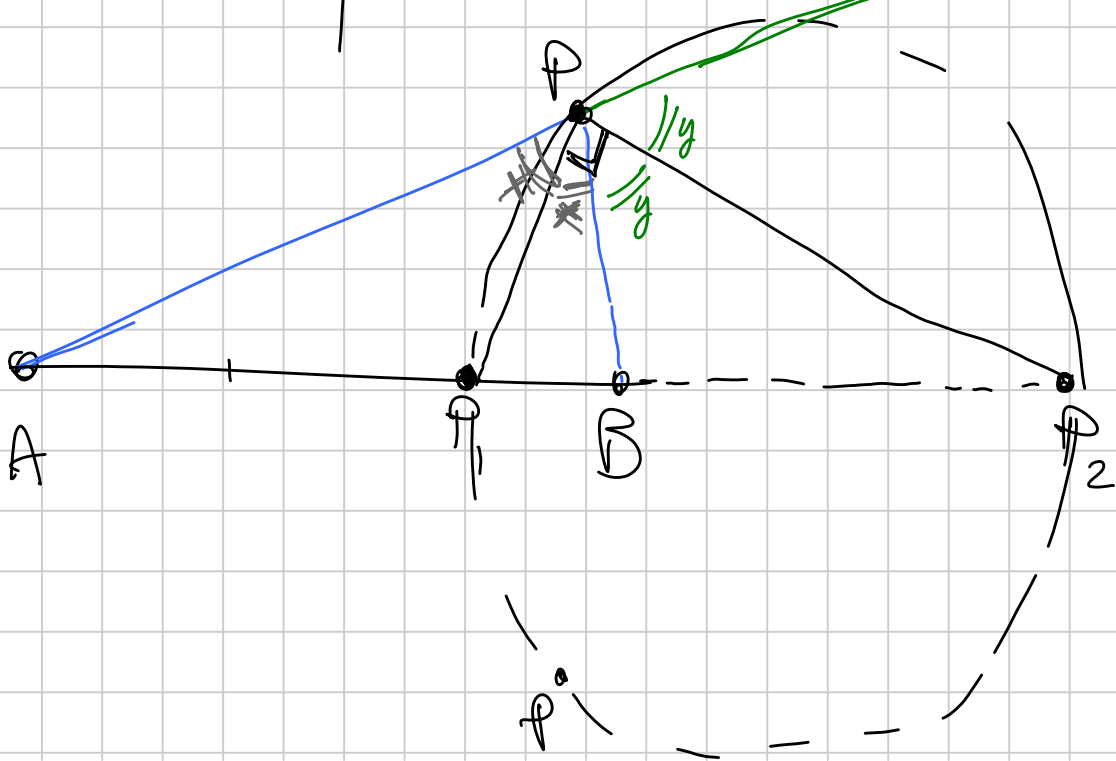
H è il simm. di B
risp. DE

Circonfrenza di Apollonio



$$\lambda \neq 1$$

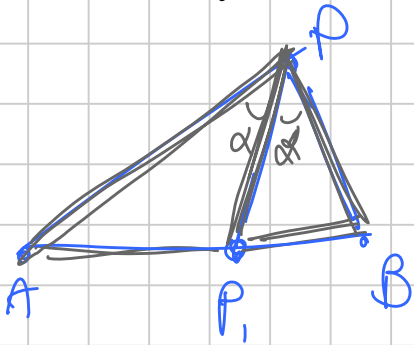
il luogo dei punti P tali
che $AP = \lambda PB$ è
una circonferenza



$$AP = \lambda BP$$

\Rightarrow

$$\hat{P_1 P P_2} = 90^\circ \quad \text{Hope!}$$



$$\frac{AP}{BP} = \lambda = \frac{AP_1}{BP_1}$$

Thm

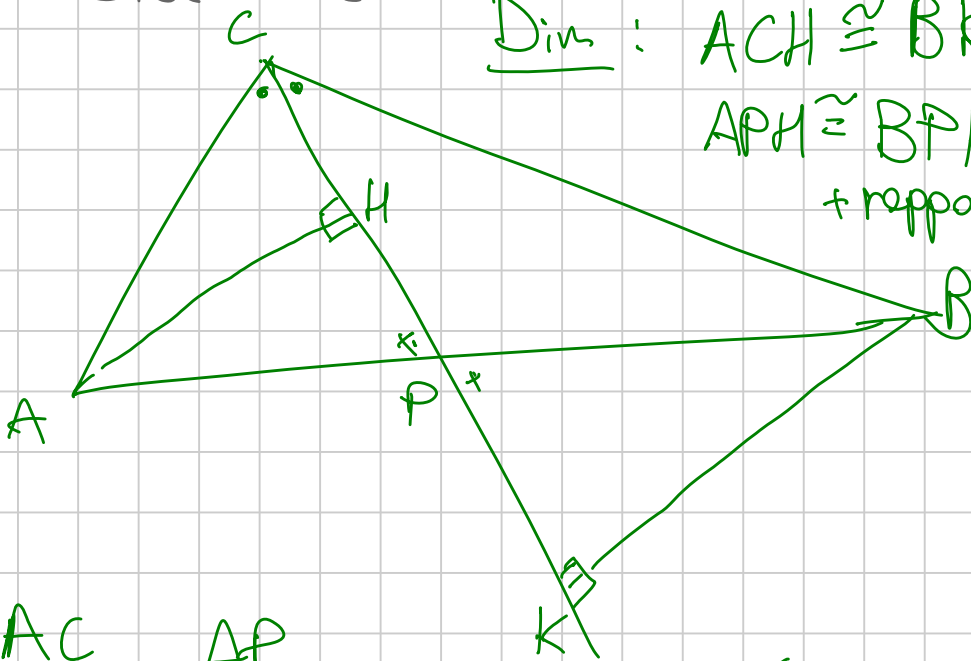
bisectrice

Nascono qualche punto...

Dim: $ACH \cong BKC$

$APH \cong BPK$

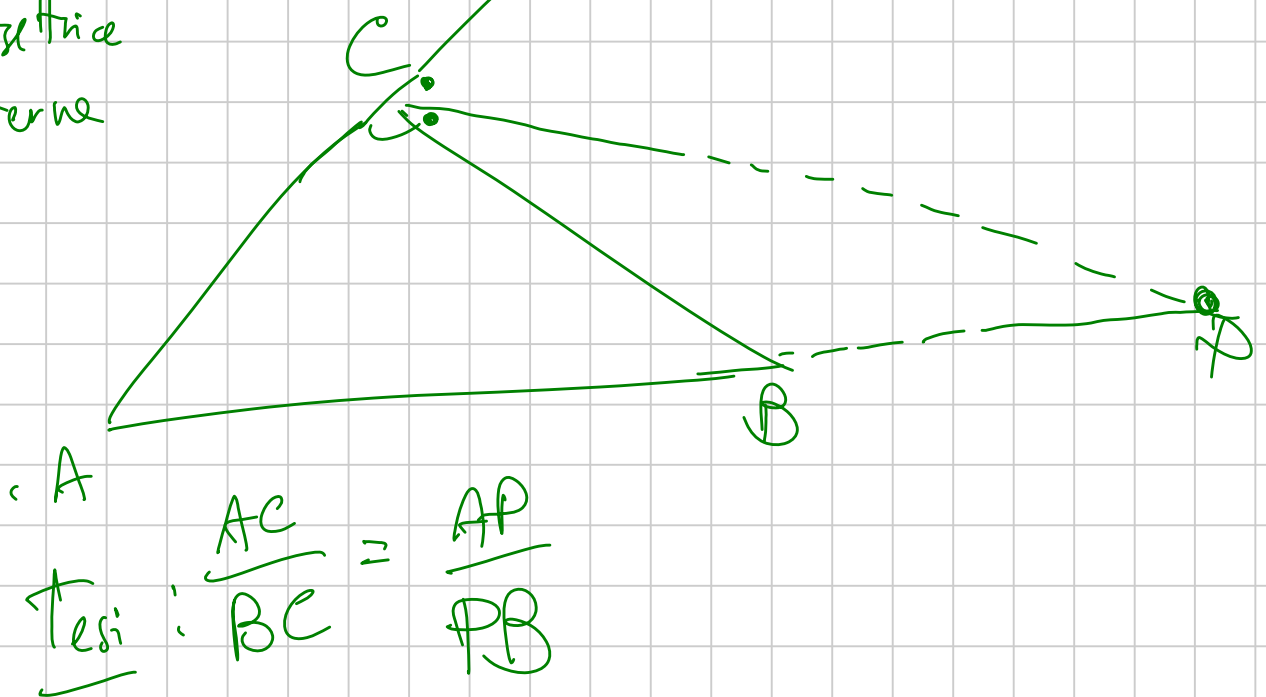
+ rapporti di segmenti
(quali?)



$$\frac{AC}{CB} = \frac{AP}{PB}$$

Ci manca un altro pezzo!

Th: bisettrice
esterne



A

Tesi

$$\frac{AC}{BC} = \frac{AP}{PB}$$

dim: le stessa!