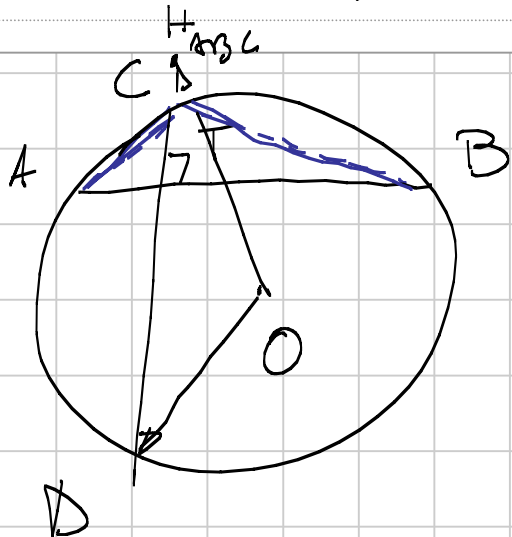


# GEOMETRIA 2 - ESERCIZI

Titolo nota

05/09/2007

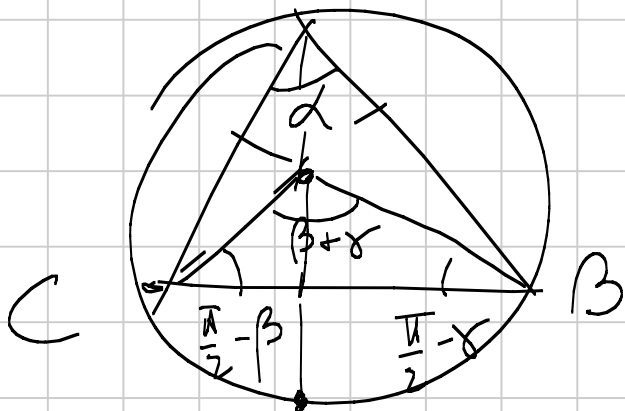
1)



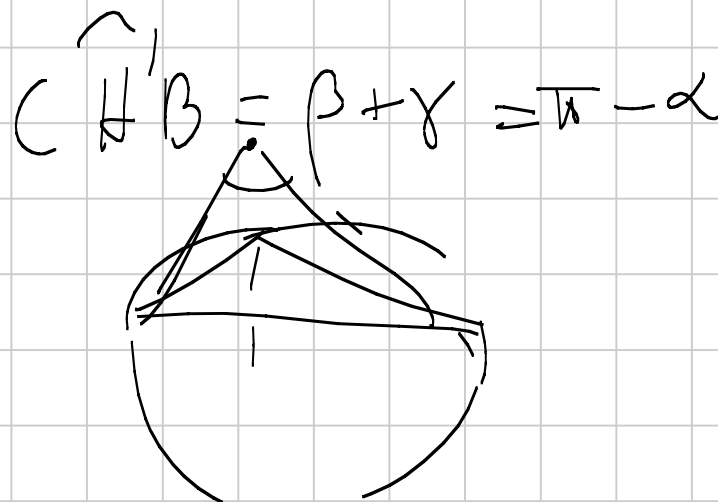
$$\vec{OA} + \vec{OB} + \vec{OC} + \vec{OD} = 2\vec{OT}$$

$\underbrace{\hspace{10em}}_{\vec{OH}_{ABC}}$

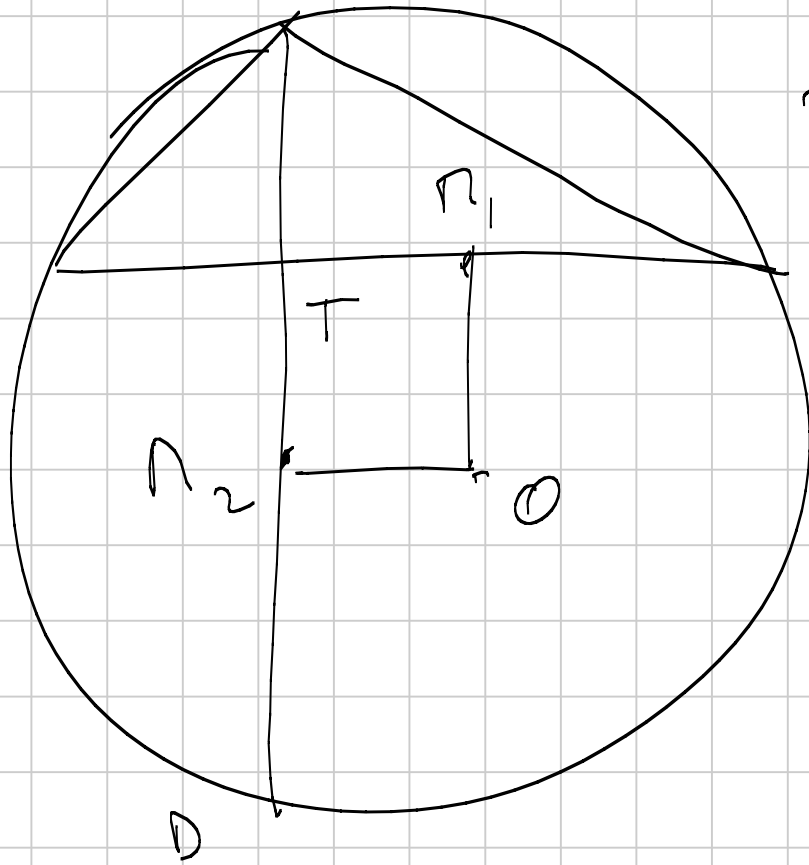
$H_{ABC}$  e retta per C e D



$H_{ABC}$



$$\widehat{CH_{ABC}B} = \beta + \gamma = \pi - \alpha$$



$$d(H_{ABC}, T) = d(T, D)$$

$$\frac{\vec{OH}_{ABC} + \vec{OD}}{2} = \vec{OT}$$

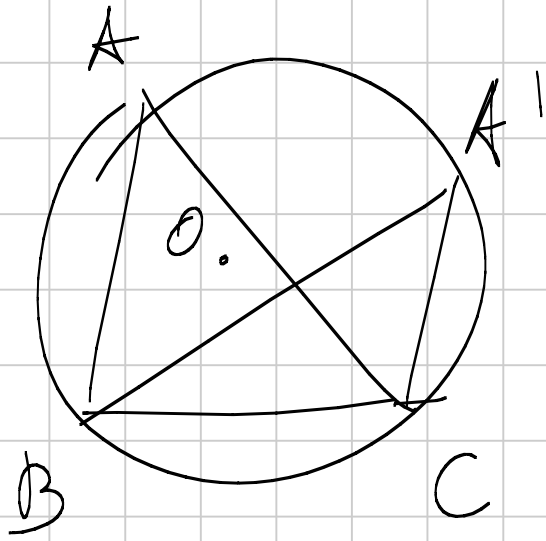
$$\vec{OH}_{ABC} + \vec{OD} = 2\vec{OT}$$

$$\vec{On}_1 = \frac{\vec{OA} + \vec{OB}}{2}$$

$$\vec{On}_2 = \frac{\vec{OC} + \vec{OD}}{2}$$

$$\Rightarrow \vec{On}_1 + \vec{On}_2 = \vec{OT}$$

5)



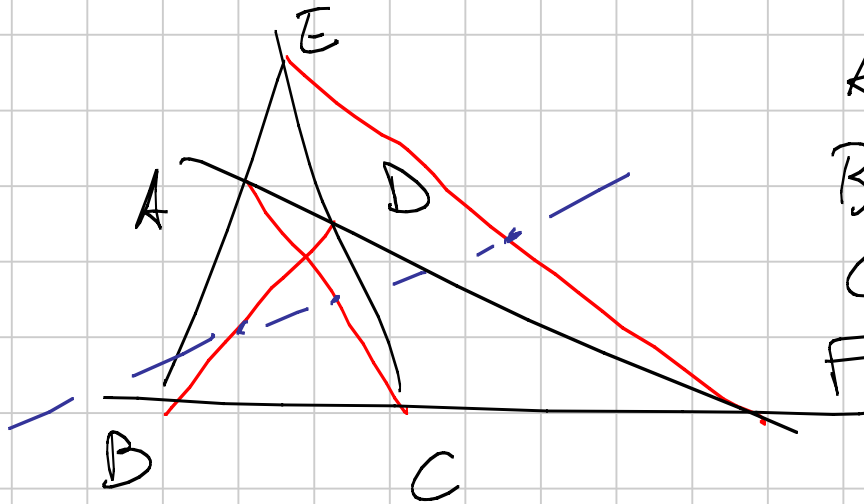
$$HH' \parallel AA' \quad HH' = AA'$$

$$\vec{H} = \vec{A} + \vec{B} + \vec{C}$$

$$\vec{H}' = \vec{A}' + \vec{B} + \vec{C}$$

$$\vec{A} - \vec{A}' = \vec{H} - \vec{H}'$$

6)



$$A: (0, 1)$$

$$B: (0, 0)$$

$$C: (1, 0)$$

$$D: (p, q)$$

$$AB : \{x=0\}$$

$$CD : \left\{ \frac{q}{p-1} (x-1) = y \right\}$$

$$\begin{cases} y_E = \frac{q}{1-p} \\ x_E = 0 \end{cases}$$

$$BC : \{y=0\}$$

$$DA : \left\{ \frac{q-1}{p} x = y-1 \right\}$$

$$\begin{cases} x_F = \frac{p}{1-q} \\ y_F = 0 \end{cases}$$

$$\Pi_{EF} = \left( \frac{p}{2(1-q)}, \frac{q}{2(1-p)} \right)$$

$$\Pi_{AC} = \left( \frac{1}{2}, \frac{1}{2} \right)$$

$$\Pi_{BD} = \left( \frac{p}{2}, \frac{q}{2} \right)$$

$$\left( \frac{p}{2(1-q)} - \frac{1}{2}, \frac{q}{2(1-p)} - \frac{1}{2} \right)$$

$$\left( \frac{p}{2} - \frac{1}{2}, \frac{q}{2} - \frac{1}{2} \right)$$

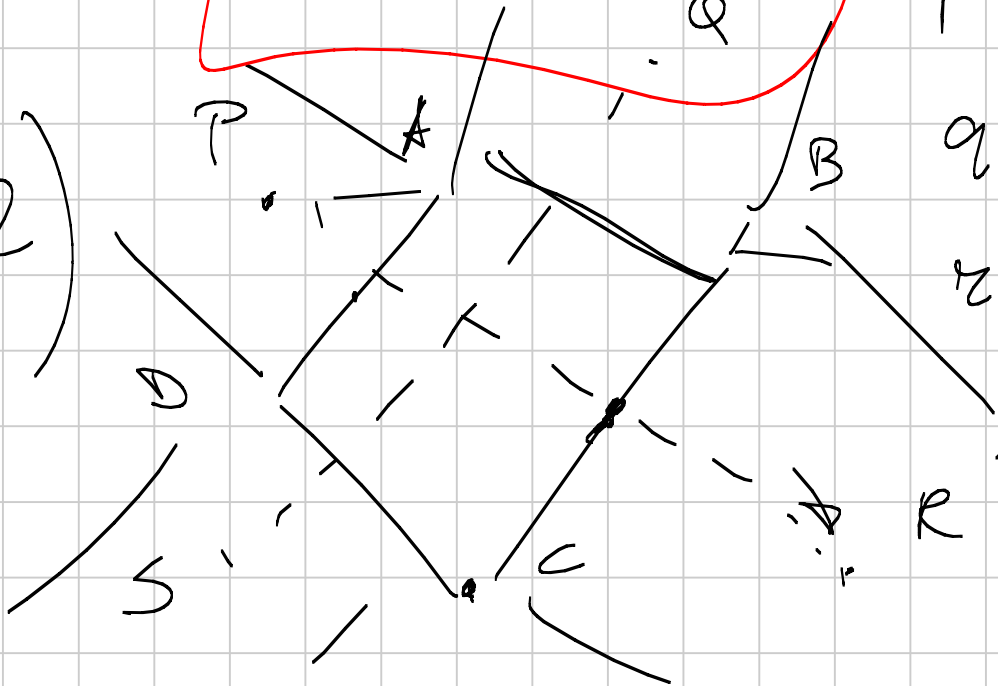
- Con i vettori

$$\frac{\vec{A} + \vec{B}}{2} \quad \frac{\vec{C} + \vec{D}}{2}$$

$$\frac{\vec{A} + \vec{C}}{2} \quad \frac{\vec{B} + \vec{D}}{2}$$

$$\frac{\vec{A} + \vec{D}}{2} \quad \frac{\vec{C} + \vec{B}}{2}$$

(2)



$$p = \left( \frac{a+d}{2} - a \right) (1-i) + a$$

$$q = \left( \frac{a+b}{2} - a \right) (1+i) + a$$

$$r = \left( \frac{c+b}{2} - c \right) (1-i) + c$$

$$s = \left( \frac{c+d}{2} - c \right) (1+i) + c$$

$$p - r = (1 - i) \left( \frac{a + d - c - b}{2} - a + c \right) + a - c$$

$$q - s = (1 + i) \left( \frac{a + b - c - d}{2} - a + c \right) + a - c$$

$$i(p - r) = (i + 1) \left( \frac{a + d - c - b}{2} - a + c \right) + ia - ic =$$

$$= i \left( \frac{-a + d + c - b}{2} \right) + \frac{a + d + c - b}{2} + i(a - c) =$$

$$= i \left( \frac{a + d - c - b}{2} \right) + \frac{a + d - c - b}{2} + a - c =$$

$$= (1 + i) \left( \frac{a + d - c - b}{2} \right) + a - c = q - s$$