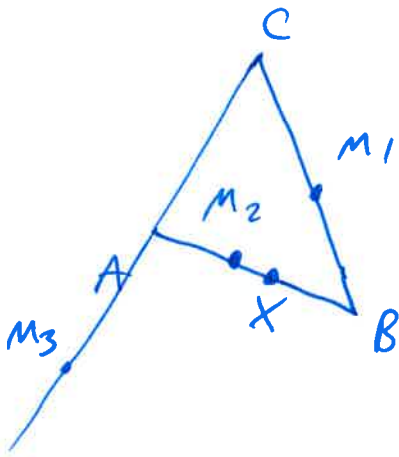


KÄÄNTEINEN MENELAOS

LAUSE

(11)



$$\text{Jos } \frac{CM_1}{M_1B} \times \frac{BM_2}{M_2A} \times \frac{AM_3}{M_3C} = 1$$

NIIN $M_2 \in \overleftrightarrow{M_1M_3}$

(TOISIN SANOEN PISTEET M_1, M_2, M_3 OVAT SAMALLA SUORALLA).

AT. $\overleftrightarrow{M_1M_3} \cap AB = X \neq M_1$

OLKoon X ESIM. JANALLA M_2B .

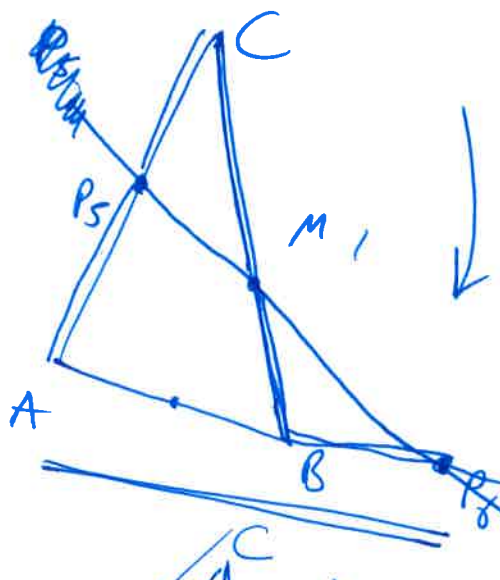
$$\text{NYT } \begin{cases} BM_2 > BX \\ M_2A < XA \end{cases} \Rightarrow \frac{BM_2}{M_2A} > \frac{BX}{M_2A} > \frac{BX}{XA}$$

MENELAOS KOLMIOLLE $\triangle ABC$ JA SUORALLE ~~M_1, X, M_3~~ $\overleftrightarrow{M_1, X, M_3}$

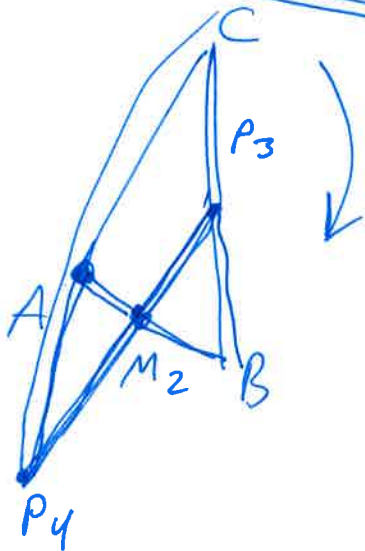
$$\frac{CM_1}{M_1B} \times \frac{BX}{XA} \times \frac{AM_3}{M_3C} = 1 = \frac{CM_1}{M_1B} \times \frac{BM_2}{M_2A} \times \frac{AM_3}{M_3C}$$

OLETUS

$$\Rightarrow \frac{BX}{XA} = \frac{BM_2}{M_2A} > \frac{BX}{XA} \quad \text{RR}$$



$$\frac{CM_1}{M_1B} \times \frac{BP_6}{P_6A} \times \frac{AP_5}{P_5C} = 1$$



$$\frac{CP_3}{P_3B} \times \frac{BM_2}{M_2A} \times \frac{AP_4}{P_4C} = 1$$

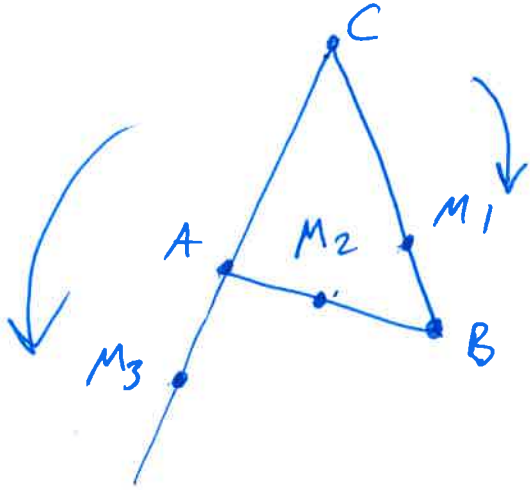
$$\frac{CP_1}{P_1 B} \times \frac{BP_5}{P_5 A} \times \frac{AP_3}{P_3 C} = 1 \quad \left| \quad 1 = \left(\frac{CP_3}{P_3 B} \times \frac{BP_1}{P_1 A} \times \frac{AP_5}{P_5 C} \right)^{-1} \quad (4)$$

$$? \quad \frac{CP_6}{P_6 B} \times \frac{BP_2}{P_2 A} \times \frac{AP_4}{P_4 C} = 1 \quad \left(\frac{CP_2}{P_2 B} \times \frac{BP_6}{P_6 A} \times \frac{AP_4}{P_4 C} \right)^{-1} = 1$$

$$(3) \quad \frac{CP_2}{P_2 B} \times \frac{BP_1}{P_1 A} \times \frac{AP_3}{P_3 C} = 1 \quad (5)$$

(1) - (5)

$$\Rightarrow \frac{CM_1}{M_1 B} \times \frac{BM_2}{M_2 A} \times \frac{AM_3}{M_3 C} = 1$$



$$\frac{CM_1}{M_1B} \times \frac{BM_2}{M_2A} \times \frac{AM_3}{M_3C} = 1$$

KIÄNTEINEN MENELAO KSEN LAUSE
 \Rightarrow

PISTEET M_1, M_2, M_3
 OVAT SAMALLA SUORALLA,

$$\frac{CM_3}{M_3A} \times \frac{AM_2}{M_2B} \times \frac{BM_1}{M_1C} = 1$$

TULO A ~~menetelmä~~ " $\alpha \times \beta \times \gamma$ "
 KIRJOTTELESSA KIERTOSUUNTA
 VOIDAAN OTTAA VASTA PÄIVÄÄN
 TAI MYÖTÄ PÄIVÄÄN.

{ MYÖTÄ P. " $\alpha \times \beta \times \gamma$ "
 { VASTA P. " $\gamma^{-1} \times \beta^{-1} \times \alpha^{-1}$ "

ESIM. PLATONIN KAPPALEET TASO VERKKOINA

