

Zad. 7
Wykaż, że $E_1H_2 = OM_1$.

$\hookrightarrow AE_1 = OM_1$ ($F_3 \triangle ABC$)
 $M_1M_2 = \frac{1}{2}AC$ ($F_1 \triangle ABC$)
 $\overline{M_1M_2} \parallel \overline{AC}$

$\overline{H_1A} \perp \overline{CB} \perp \overline{OM_1}$
 $\overline{CH} \parallel \overline{OM_1}$

Zad. 7
Wykaż, że $E_1H_2 = OM_1$.

$E_1H_2 = \frac{1}{2}AH$ ($F_2 \triangle AHH_2$)
 $OM_1 = \frac{1}{2}AH$ ($F_3 \triangle ABC$)
 $E_1H_2 = OM_1$ c.m.d.

Zad. 8
T: Wykaż, że $M_1E_2 = M_2E_1 = OM_3$.

$\hookrightarrow OM_3 = \frac{1}{2}CH$ ($F_3 \triangle ABC$)
 $AE_1 = E_1H \wedge AM_1 = M_1C \Rightarrow$
 $M_1E_1 = \frac{1}{2}CH$ ($F_1 \triangle ACH$)
 $BM_2 = M_2H \wedge BE_2 = E_2H \Rightarrow M_2E_2 = \frac{1}{2}CH$ ($F_2 \triangle BCH$)

$\therefore (1) \wedge (2) \wedge (3) \Rightarrow T \in L_A$
 c.m.d.

Zad. 9
T: Wykaż, że $M_1E_2 \parallel M_2E_1$.

$\hookrightarrow E_1M_2 \parallel CH$ ($F_1 \triangle ACH$)
 $E_2M_1 \parallel CH$ ($F_2 \triangle BCH$)
 $\therefore E_1M_2 \parallel E_2M_1$

Zad. 9
Wykaż, że kąt między prostymi H_1M_2 i H_2E_1 jest równy kątowi między prostymi H_2M_3 i H_3E_2 . T: $x = y$

$\angle E_1H_2M_1 = x = 180^\circ - |\angle E_3H_3| - |\angle E_3H_2M_1|$
 $\triangle CE_3H_2$ jest równy ($F_2 \triangle ACH$)
 $|\angle H_2CE_3| = |\angle H_3CE_3|$
 $|\angle ACH_3| = 90^\circ - x =$
 $|\angle H_2CE_3H_3| = (90^\circ - x) = 180^\circ - x$
 $|\angle H_3E_3H_2| = |\angle H_2CE_3H_3| = |\angle H_3CE_3H_2| = 90^\circ - x$
 $|\angle E_3H_3H_2| = 180^\circ - (90^\circ - x) = 90^\circ + x$
 $|\angle H_2H_3E_1| = |\angle H_3H_2E_2| = 90^\circ - x$
 $M_2H_1 = M_3B$
 $\triangle H_2H_3B \triangle F_2 \Rightarrow H_2E_1 = E_1B \Rightarrow$
 $|\angle H_2E_1H_3| = 180^\circ - x$
 $\angle H_2H_3E_1 = |\angle H_3H_2E_2| = 180^\circ - x = 32^\circ - 30^\circ$
 T.D.A.

