vertices a, b, c, d.

If $a \in h_1$, $b \in h_2$, $c \in h_3$, $d \in h_4$, then we say that T' is inscribed in T. (one to one correspondence between sides of T and vertices of T'.)

Thus, if T is inscribed in T' (i.e., T' is circumscribed about T'),

$\overline{abc} \ni p_1$ $\Rightarrow$ Let $a = p_2'$, $b = p_3'$
$\overline{abd} \ni p_2$ $\qquad c = p_4'$, $d = p_1'$.
$\overline{acd} \ni p_3$
$\overline{bcd} \ni p_4$ $\Rightarrow$ $\overline{abc} = h_1'$ $\quad \overline{abd} = h_4'$

$\overline{acd} = h_3'$ $\quad \overline{bcd} = h_2'$ $\Rightarrow$ O.K.

$\Rightarrow$ But the problem is the following:

$\overline{p_1' p_2' p_3'}$ need not contain p_4. For example, we may assume that $p_1 = [1, 0, 0, 0]$, $p_2 = [0, 1, 0, 0]$, $p_3 = [0, 0, 1, 0]$ and $p_4 = [0, 0, 0, 1]$. $\Rightarrow$

$h_1 = [0, *, *, *]$ $\quad h_2 = [*, 0, *, *]$, $\quad h_3 = [*, *, 0, *]$

$h_4 = [*, *, *, 0]$.

Let $p_1' = [0, 1, 0, 1] \in h_1$
$\quad p_2' = [1, 0, 1, 1] \in h_2$
$\quad p_3' = [1, -1, 0, -1] \in h_3$
$\quad p_4' = [-1, 1, 0, 0] \in h_4$.

$\Rightarrow$ $p_1 = p_1' + p_3'$
$\quad p_2 = p_1' + p_3' + p_4'$
$\quad p_3 = -p_1' + p_2' + p_4'$
$\quad p_4 = -p_3' - p_4'$ $\Rightarrow$ $p_1 \notin \overline{p_2' p_3' p_4'}$