1 Angles

let T' be the extriangle of T. Then

$$
\begin{aligned}
A' &= \tfrac{\pi - A}{2} \\
B' &= \ldots
\end{aligned}
$$

Note: T will be the orthic of T'.

let T'' be the orthic of T. Then, assuming T is acute, and using the same logic: $A = \tfrac{\pi - A''}{2}$ and:

$$
\begin{aligned}
A'' &= \pi - 2A \\
B'' &= \ldots
\end{aligned}
$$

or:

$$
\begin{aligned}
\sin(A''/2) &= \sin(\pi/2 - A) = \cos(A) \\
\sin(B''/2) &= \cos(B) \\
\sin(C''/2) &= \cos(C)
\end{aligned}
$$

So it appears T'' should conserve the sum of sines of its half-angles.

It remains to be proven this is also true for obtuse T.