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A Point Related to Generalizations of the Isoperimetric and Equal Detour Points

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1. Introduction

In [1], we speculated that the three hyperbolae described below are concurrent at two points, which become the Isoperimetric and Equal Detour Points under certain constraints. Here, we speculate and encourage proofs of the existence of another point associated to these hyperbolae.

2. Results

Theorem 2.1. *Let ABC be a triangle.*
Let $A'B'C'$ be a triangle which is homothetic to ABC about $X(3)$.
Let T_a be the hyperbola passing through C' whose foci are A and B.
Let $(T_a)_A$ and $(T_a)_B$ be the portions of T_a adjacent to A and B respectively.
Define T_b and T_c cyclically.
Let $(T_a)_A$ intersect $(T_b)_A$ at U_1.
Let $(T_a)_B$ intersect $(T_b)_C$ at U_2.
Let $(T_a)_A$ intersect $(T_c)_B$ at U_3.
Let $(T_a)_B$ intersect $(T_c)_C$ at U_4.
Let $(T_b)_A$ intersect $(T_c)_C$ at U_5.
Let $(T_b)_C$ intersect $(T_c)_B$ at U_6.
Then lines U_1U_2, U_3U_4, and U_5U_6 are concurrent.

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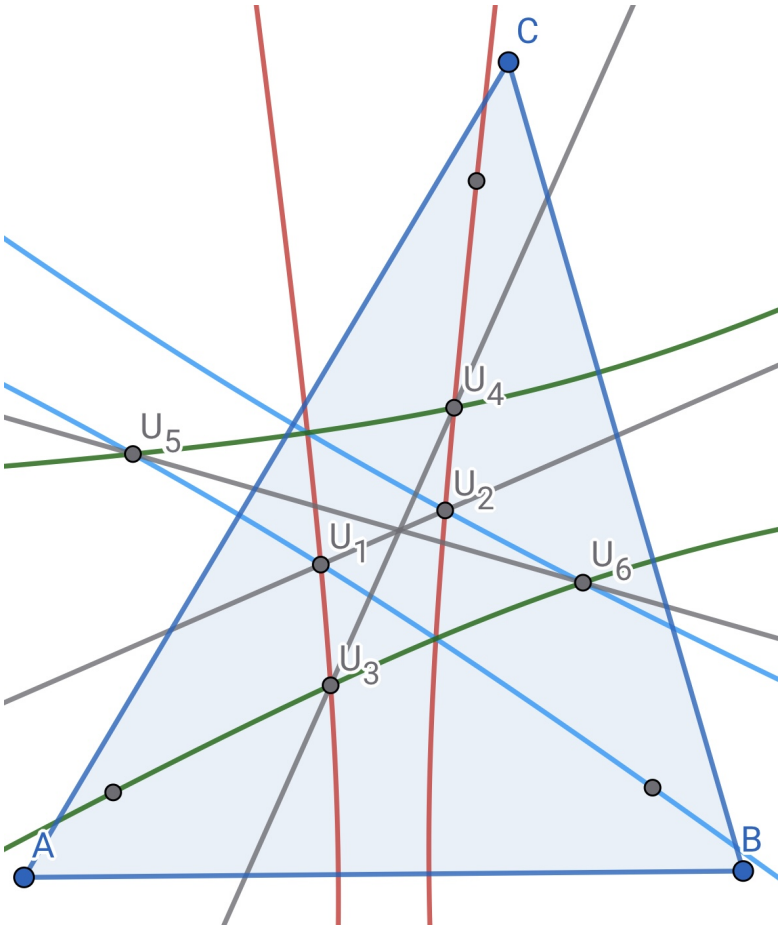

Figure 1. Illustration.

References

[1] Warren, B.L., "Generalization of the Isoperimetric and Equal Detour Points", *International Journal of Computer Discovered Mathematics*, Vol. 10 (2025), pp. 69-70.