

A Problem On Three Homothetic Centers Associated With A Convex Hexagon

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Abstract. We introduce a problem on three homothetic centers associated with a convex hexagon.

Keywords. Homothetic center, collinear, hexagon.

I have found the nice problem as follows when I researched the special case of Dao's theorem [1]. I have been posted at [2] for a year but I have not been received any proof. So I am looking for a proof from the reader.

Theorem 0.1. *Let a convex hexagon, such that its principal diagonals are concurrent. For each side of the hexagon, extend the adjacent sides to their intersection, forming a triangle exterior to the given side. Then show that: Three external (or internal) homothetic centers of three pair circumcircle of opposite triangles are collinear.*

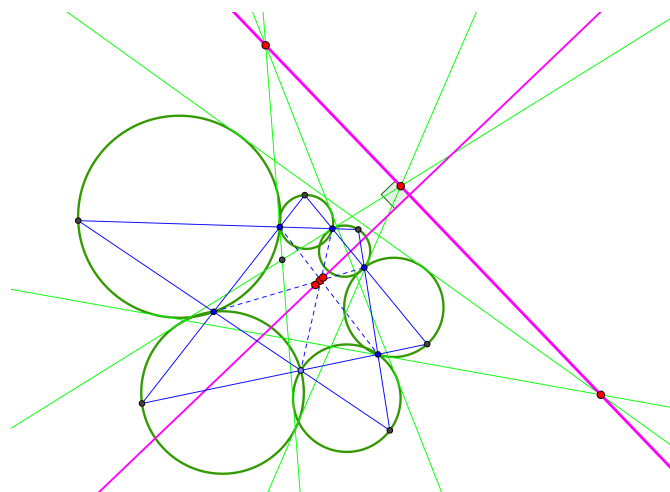


FIGURE 1.

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REFERENCES

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- [2] Dao Thanh Oai, Three homothetic centers are collinear, *Mathoverflow.nt*, available at <https://mathoverflow.net/questions/243943/>