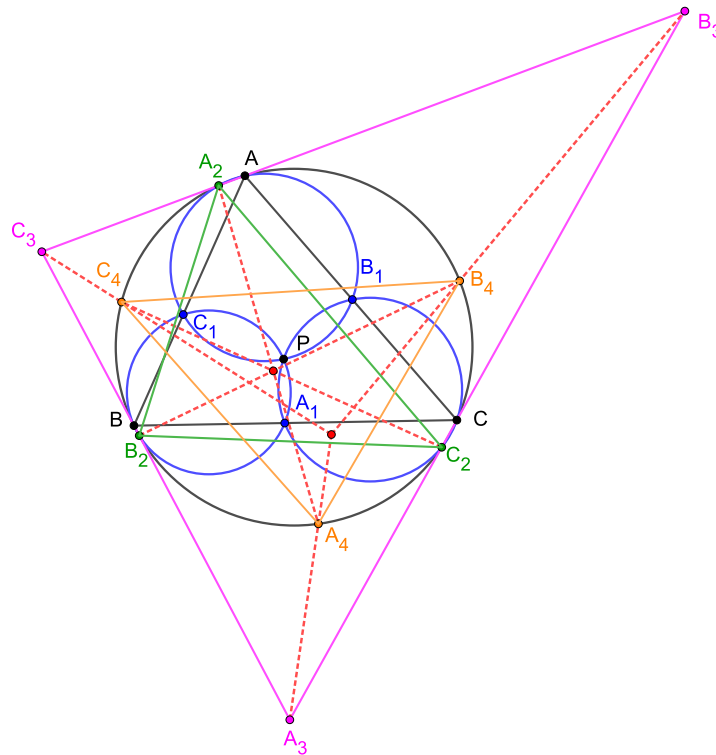


Vu Thanh Tung

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**Theorem.** Consider  $\triangle ABC$  on the plane with circumcenter  $O$ .  $P$  is a point on the plane, not lying on the lines  $OA, OB, OC$ . Let  $\triangle A_1B_1C_1$  be the pedal triangle of a point  $P$  with respect to  $\triangle ABC$ .  $A_2$  is the point, other than  $A$ , that circles  $(ABC)$  and  $(AB_1C_1)$  intersect and define  $B_2, C_2$  cyclically.  $A_3 = BB_2 \cap CC_2$  and define  $B_3, C_3$  cyclically. Let  $\triangle A_4B_4C_4$  be the circumcevian triangle of  $P$  with respect to  $\triangle ABC$ . Then:

1.  $\triangle A_2B_2C_2$  and  $\triangle A_4B_4C_4$  are perspective.
2.  $\triangle A_3B_3C_3$  and  $\triangle A_4B_4C_4$  are perspective.



Vu Thanh Tung, 250 Quang Trung, Nam Dinh city, Vietnam  
 E-mail address: tungvtt@gmail.com