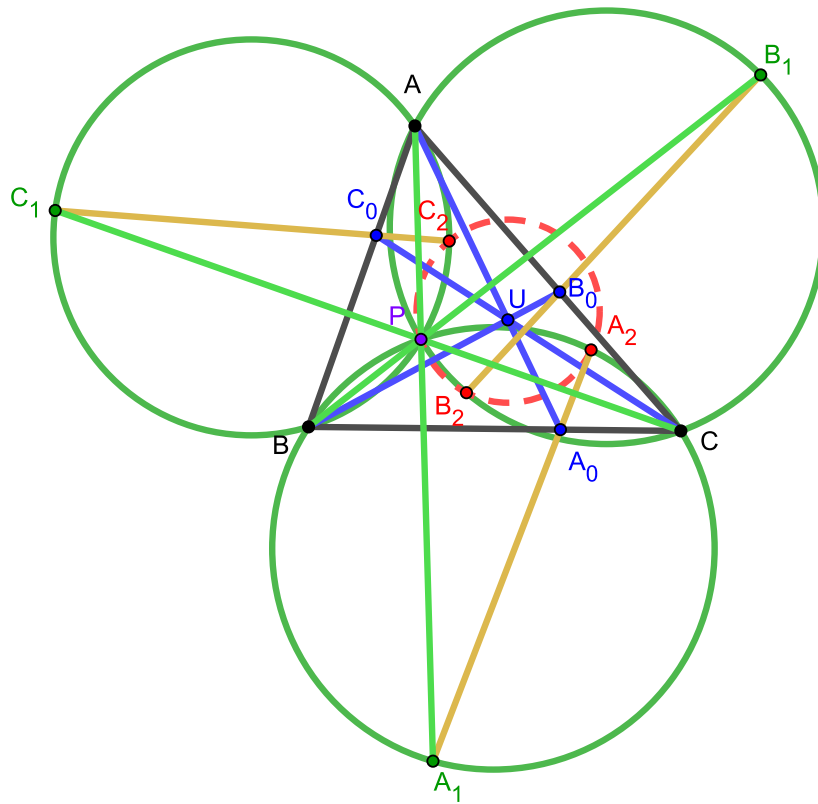


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**Theorem 1.** Consider two different points  $P, U$  on the same plane as  $\triangle ABC$ . Let  $A_0$  be the intersection of lines  $BC$  and  $AU$ . Let  $A_1$  be the point of intersection, other than  $P$ , of line  $PA$  and circle  $(PBC)$ . Let  $A_2$  be the point, other than  $A_1$ , of line  $A_1A_0$  and circle  $(PBCA_1)$ . Define  $B_2, C_2$  cyclically. Then  $P, A_2, B_2, C_2$  are concyclic.



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