Problem 10. In triangle $ABC$, point $A'$ is on $BC$, $B'$ is on $CA$ and $C'$ is on $AB$ as shown below. Given that the circle through points $A$, $B'$, $C'$ and the circle through $B$, $C'$, $A'$ intersect at a point $P$ in the interior of the triangle, prove that the circle through $C$, $A'$, $B'$ also passes through $P$. 