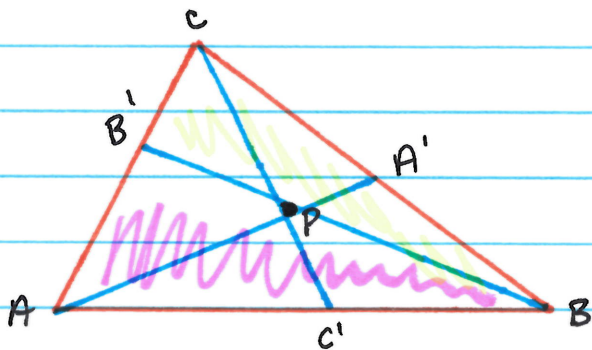


Brianna Savage  
HW 7, question 3



Looking at  $\triangle ABB'$

-  $C'$  is on  $AB$ ,  $P$  is on  $BB'$ , &  $C$  is on  $AB'$

$$\text{then } \frac{C'A}{C'B} \cdot \frac{CB'}{CA} \cdot \frac{PB}{PB'} = 1 \text{ by Thm 3)}$$

Looking at  $\triangle BB'C$

-  $A$  is on  $BC$ ,  $A'$  is on  $BC$ , &  $P$  is on  $BB'$

$$\text{then } \frac{A'B}{A'C} \cdot \frac{AC}{AB'} \cdot \frac{PB'}{PB} = 1 \text{ by Thm 3)}$$

By Algebra:

$$\left( \frac{C'A}{C'B} \cdot \frac{CB'}{CA} \cdot \frac{PB}{PB'} \right) \left( \frac{A'B}{A'C} \cdot \frac{AC}{AB'} \cdot \frac{PB'}{PB} \right) = 1$$

$$\text{then } \left( \frac{C'A}{C'B} \cdot \frac{CB'}{CA} \cdot \frac{PB}{PB'} \right) \left( \frac{A'B}{A'C} \cdot \frac{AC}{AB'} \cdot \frac{PB'}{PB} \right) = 1$$

$$\text{so } \frac{C'A}{C'B} \cdot \frac{CB'}{AB'} \cdot \frac{A'B}{A'C} = 1 \text{ as claimed.}$$

QED.