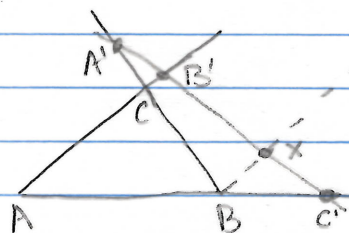


Homework 6 Problem 4

Given $A'B' \neq C'$ are collinear

Luis Haro

Prove



$$\frac{A'B}{A'C} \cdot \frac{B'C}{B'A} \cdot \frac{C'A}{C'B} = 1$$

- BF 13 - line $l \parallel AC$ through B
Point x be intersection

(1) • Thm C $AB' \parallel BX$ - $\triangle AC'B' \sim \triangle BC'X$

(2) • Thm C $AB' \parallel BX$ - $\triangle BXA' \sim \triangle CBA'$

(3) • BF 4 $\frac{AC'}{BC'} = \frac{C'B}{C'X} = \frac{BA}{XB}$ for (1)

(4) • BF 4 $\frac{BX}{CB'} = \frac{XA'}{BA'} = \frac{A'B}{A'C}$ for (2)

(3*) • Algebra $BX = \frac{B'A \cdot C'B}{C'A}$

(4*) • Algebra $BX = \frac{A'B \cdot BC'}{A'C}$

(3*)+(4*) • $\frac{B'A \cdot C'B}{C'A} = \frac{A'B \cdot BC'}{A'C}$

• Algebra $1 = \frac{A'B}{A'C} \cdot \frac{B'C}{B'A} \cdot \frac{C'A}{C'B}$ as claimed \triangleleft