Example 34 : Suppose I the center of the inscribed circle of is $\triangle ABC$, c_1,c_2,c_3 the three circumscribed circles of I_a,I_b,I_c is , $\triangle ABC$ the centers of the three circumscribed c_1,c_2,c_3 circles of respectively $\triangle ABC$, then

$$\frac{AB\cdot AC}{I_aA^2}+\frac{BA\cdot BC}{I_bB^2}+\frac{CA\cdot CB}{I_cC^2}=1.$$

$$\frac{I_aA^2}{AB\cdot AC}-\frac{I_aB^2}{BA\cdot BC}-\frac{I_aC^2}{CA\cdot CB}=1\ .$$

Suppose $A=a^2$, $B=b^2$, $C=c^2$, $I_a=ab-bc+ca$, $I_b=ab+bc-ca$, $I_c=-ab+bc+ca$,

verifiable $\frac{\left(c^2-a^2\right)\left(b^2-a^2\right)}{\left(a^2-I_a\right)^2}+\frac{\left(a^2-b^2\right)\left(c^2-b^2\right)}{\left(b^2-I_b\right)^2}+\frac{\left(b^2-c^2\right)\left(a^2-c^2\right)}{\left(c^2-I_c\right)^2}=1,$

ie $\frac{AB\cdot AC}{I_aA^2}+\frac{BA\cdot BC}{I_bB^2}+\frac{CA\cdot CB}{I_cC^2}=1.$

Verifiable $\frac{\left(a^2-I\right)\left(a^2-I_a\right)}{\left(b^2-a^2\right)\left(c^2-a^2\right)}=1,$ ie $\frac{IA\cdot I_aA}{BA\cdot CA}=1.$