



Example 102 : As shown in Figure 1, the circle O is inscribed in the quadrilateral $ABCD$, $OA \perp BD$, to prove: CA bisects $\angle BCD$.

$$\frac{\frac{C-B}{C-A} \frac{O-A}{A-O} \frac{A-C}{A-D}}{\frac{C-D}{A-C} \frac{D-A}{B-D} \frac{B-D}{B-C}} = 1, \quad \left(\frac{B-S}{A-D} \frac{B-D}{B-C} \right) \frac{C-A}{B-S} \frac{B-C}{A-D} = -1,$$