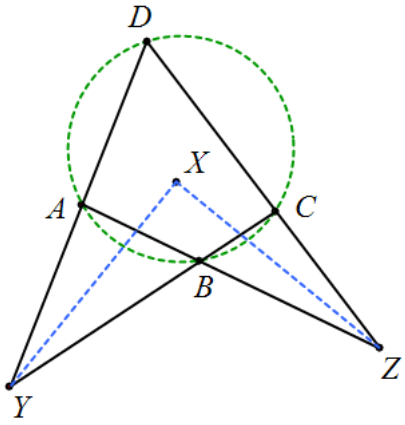

replace and equal try

Example 84 : As shown in Figure 3, the quadrilateral $ABCD$ is inscribed in a circle , straight line DA intersects CB at Y, AB intersects DC at Z, and the angle bisectors of $\angle AYB$ and $\angle BZC$ *intersect at point X.* Prove: $XY \perp XZ$.

$$\left(\frac{X-Y}{X-Z}\right)^2=\frac{\dfrac{X-Y}{C-B}\dfrac{A-B}{X-Z}}{\dfrac{D-A}{X-Y}\dfrac{}{D-C}}\left(\frac{A-D}{A-B}\frac{C-B}{C-D}\right).$$

Note that the right side of the equation is a negative real number, so XY and XZ can only be vertical, but not others.

Extension: As shown in the figure, the quadrilateral $ABCD$, straight line DA intersects CB at Y, AB intersects DC at Z, and the angle bisectors of $\angle AYB$ and $\angle BZC$ *intersect at point X.* Prove: The necessary and sufficient conditions for $XY \perp XZ$ *are* A, B, The four points C and D *share a circle.*