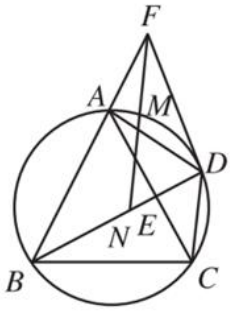
Example 1 80 : As shown in Figure 1 , *the diagonals* AC and BD of the inscribed quadrilateral $ABCD$ intersect at point E, and $AC \perp BD$, $AB = AC$, pass through point D and make $DF \perp BD$, intersect the extension line of BA at point F, the bisector of $\angle BFD$ intersects AD and BD at *points* M *and* N *respectively*. To prove : $\angle BAD = 3\angle DAC$.



$$\frac{\left(\frac{A-D}{A-C}\right)^3}{\frac{A-D}{A-B}} = -\left(\frac{D-B}{C-A}\right)^2 \left(\frac{\frac{A-D}{A-C}}{\frac{B-D}{B-C}}\right)^2 \frac{\frac{B-A}{B-C}}{\frac{C-B}{C-A}},$$