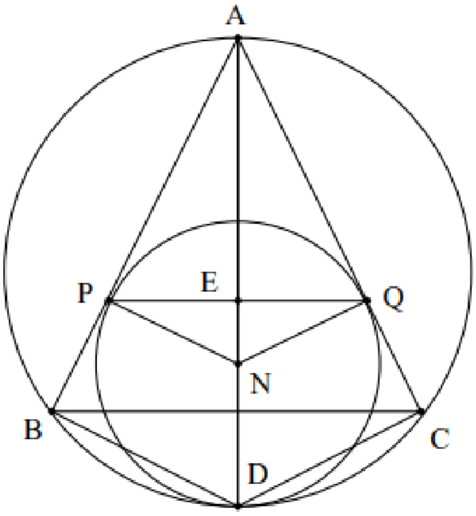
Example 148 : As shown in Figure 3, in $\triangle ABC$, $AB = AC$, circle N is inscribed on the circumscribed circle of $\triangle ABC$, and is tangent to AB, AC respectively at P, Q, to prove: the midpoint E *of the line segment* PQ is $\triangle ABC$ *The* center of the inscribed circle. (1978 *IMO* test questions).



$$\frac{B-A}{B-E} / \frac{B-E}{B-C} =$$

$$\frac{B-A}{P-A}\frac{(B-C)(P-Q)}{(P-E)^2}\left(\frac{P-N}{B-D}\right)^2\left(\frac{D-B}{D-P} / \frac{E-B}{E-P}\right)^2\left(\frac{P-A}{P-Q} / \frac{N-P}{N-A}\right)\left(\frac{N-P}{N-A} / \left(\frac{P-N}{P-D}\right)^2\right)$$

There is a square term in the conclusion of the verification $(B-E)^2$. If only one term is contained in the condition, $B-E$ it is easy to have a chain reaction, because this term will be squared. Incidentally, other parts of the term will also be squared, and these squared terms will either be eliminated by the new squared term, or divided into two, requiring two primary terms to be eliminated. This will result in longer and more complex identities. Therefore, readers should be mentally prepared to encounter such problems.