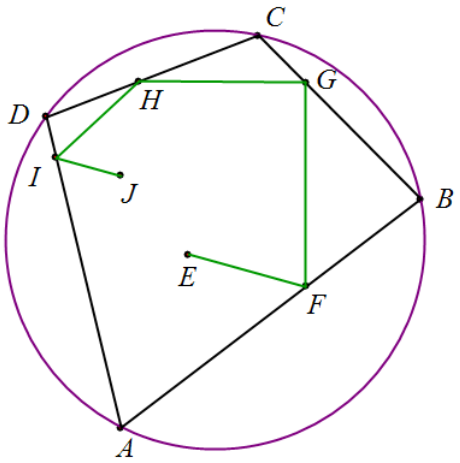
geometric dual



Example 2 27 : As shown in the figure, the circle O is inscribed with the quadrilateral ABCD . It is known that the straight lines EF and GF are symmetrical about AB, the straight lines GF and HG are symmetrical about BC, the straight lines HG and HI are symmetrical about CD, and the straight lines HI and JI are symmetrical about DA. Prove that: IJ//EF.

$$\frac{I-J}{E-F}=\frac{\frac{A-O}{A-B}\frac{C-B}{C-O}\frac{C-O}{C-D}\frac{A-D}{A-O}\frac{B-A}{F-E}\frac{G-H}{B-C}\frac{D-C}{H-G}\frac{I-J}{D-A}}{\frac{B-A}{B-O}\frac{B-O}{B-C}\frac{D-C}{D-O}\frac{D-O}{D-A}\frac{F-G}{A-B}\frac{C-B}{G-F}\frac{H-I}{C-D}\frac{A-D}{I-H}}$$