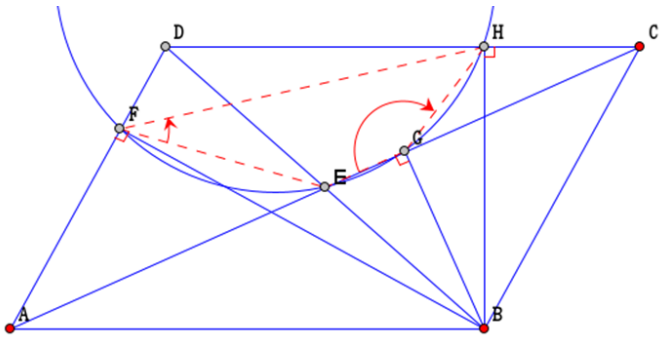

Example 172 : As shown in Figure 3, in the parallelogram $ABCD$, AC intersects BD at E, and the feet of B on AD, AC, and CD are respectively F, G, and H. Prove that: E, F, G, and H are four points in a circle .

$$\frac{\frac{F-H}{F-E}}{\frac{G-H}{G-E}}=\frac{\frac{B-H}{B-C}}{\frac{G-H}{G-C}}\frac{\frac{H-F}{H-D}}{\frac{B-F}{B-D}}\frac{\frac{B-F}{B-E}}{\frac{F-E}{F-B}}\left(\frac{\frac{B-C}{B-F}}{\frac{D-H}{B-H}}\right)\frac{G-E}{C-G}\frac{B-E}{B-D}.$$

multiple choice questions

This question is not proved by geometry experts , so the question is automatically generated

Mix the conditions together to multiply and divide, as short as possible, and finally see if there is any geometric meaning.