



Example 2 21 : As shown in the figure, AD is a chord on a circle, B and C are on AD , four points A, B, B_1, A_1 share a circle, B, C, B_1, C_1 share a circle, C, D, C_1, D_1 share a circle, and A, D, D_1, A_1 share a circle. Prove: A_1, B_1, C_1, D_1 share a circle.

$$\frac{\frac{B_1 - A_1}{B_1 - C_1}}{\frac{A_1 - D_1}{D_1 - C_1}} = \frac{\frac{A_1 - B_1}{B_1 - B}}{\frac{A - A_1}{A - D}} \frac{\frac{C - C_1}{B_1 - C_1}}{\frac{B_1 - B}{B_1 - B}} \frac{\frac{C_1 - D_1}{C - C_1}}{\frac{C - C_1}{A - D}} \frac{\frac{D - D_1}{D_1 - D}}{\frac{A_1 - D_1}{A_1 - A}} \circ$$