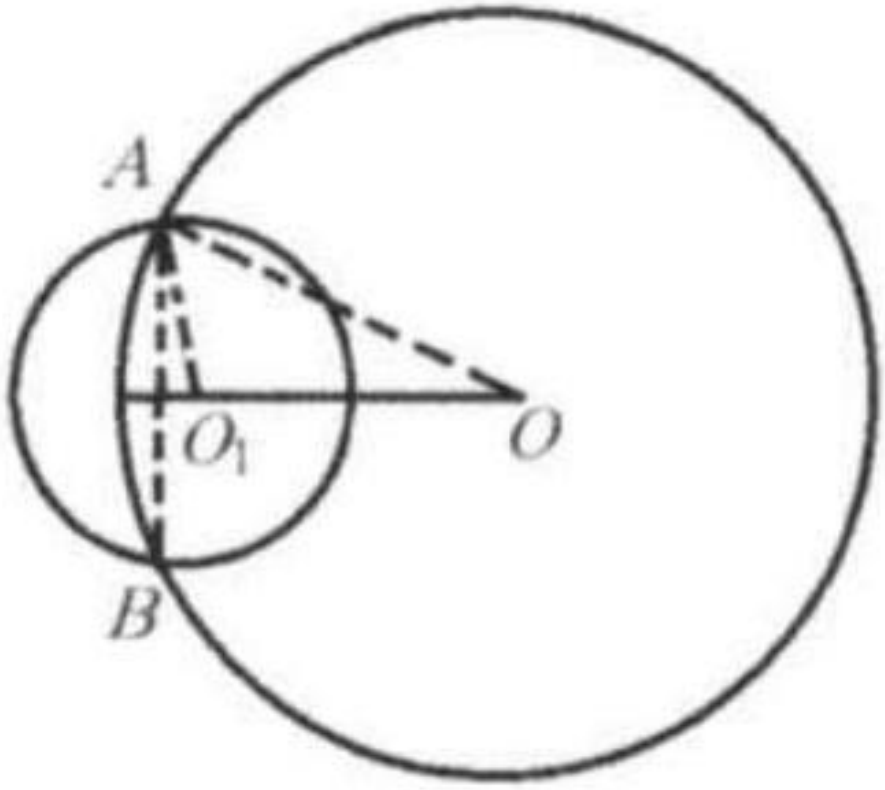
Example 5

The radii are 10 feet and 17 feet of two intersecting circles. The value for the distance between the centers of the circles is 12 . Find the length of the common chord.
(A) $3\sqrt{11}$
(B) $\frac{65}{6}$
(C) $4\sqrt{6}$
(D) 10

Solution: (D).
Let the centers be O and O_1 of two circles. The intersecting



point are A and B. Connect OA, AB, O_1A.
In $\triangle OO_1A, OA = 13, OO_1 = 12, O_1A = 5$.

Since $5^2 + 12^2 = 13^2$, we know that $\angle AO_1O = 90^\circ$.
So the common chord AB goes through O_1.
Thus $AB = 10$.