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some theorems on strict betweenness relations

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Let B be a strict betweenness relation. In the following the sets $B_{*pq}, B_{p*q}, B_{pq*}, B_{pq}, B(p, q)$ are defined in the entry about some theorems on the axioms of order.

Theorem 1. *Three elements are in a strict betweenness relation only if they are pairwise distinct.*

Theorem 2. *If B is strict, then B_{*pq}, B_{p*q} and B_{pq*} are pairwise disjoint. Furthermore, if $p = q$ then all three sets are empty.*

Theorem 3. *If B is strict, then $B_{pq} \cap B_{qp} = B_{p*q}$ and $B_{pq} \cup B_{qp} = B(p, q)$.*

Theorem 4. *If B is strict, then for any $p, q \in A, p \neq q$, B_{*pq}, B_{p*q} and B_{pq*} are infinite.*