Problem of the Week-7: Red States-Blue States

A jar contains R red marbles and B blue marbles where $R > B$. The marbles are removed from the jar by selecting one marble, at random, without replacement, until all marbles are removed. What is the probability that the total number of red marbles removed will always be strictly greater than the total number of blue marbles removed *after every selection*. (Assume that the marbles are well mixed)

As always, show your work, fully explain and justify your answer.