1. *Is it possible that an event is independent of itself? If so, when?*

 The only events that are independent of themselves are those with probability either 0 or 1. That follows from the fact that a number is its own square if and only if it's either 0 or 1. The only way a random variable X can be independent of itself is if for every measurable set A, either P(X∈A)=1 or P(X∈A)=0

1. *Is it always true that if A and B are independent events, then and are independent events? Show that it is, or give a counterexample.*

Assume A and B are independent. Then,