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

**Ans:** This is only possible in the extreme cases that the event has probability 0 or 1.

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

**Ans:** Yes,Since A and B are independent, this becomes

1 - P(A) – P(B) + P(A)P(B) = (1 – P(A))(1 – P(B)) = P(Ac)P(Bc)