

Homework exercises due Sept. 6

Show your work! Write neatly!

1. Prove *Bonferroni's inequality*:

$$P(E \cup F) \geq P(E) + P(F) - 1.$$

2. Let A and B be mutually exclusive events for which $P(A) = 0.2$ and $P(B) = 0.6$. What is the probability that:
 - (a) either A or B occurs?
 - (b) A occurs but B does not?
 - (c) both A and B occur?
3. There are n socks in a drawer; four are green. Two socks are chosen. What value of n makes the probability of "Two green socks chosen" equal $\frac{1}{2}$?
4. A forest contains 22 elk, of which 6 are captured and tagged. Later, 5 are captured. What is the probability that 2 of these 5 have been tagged?