

Due: Monday October 17th, 1pm.

1) 3.8.12

2) 4.3.11

3) How many n digit numbers in which all digits are 1, 2 or 3 have the property that adjacent digits differ by at most 1?

4) 5.4.4

5) Show that an event A is independent of all other events if and only if the probability of A is 0 or 1.

6) Three prisoners (say A, B and C) are being held without trial. The president has decided to free one of them and kill the other two. Prisoner A therefore assesses his chance of survival as $1/3$. He asks the guard to tell him the name of some other prisoner who will be killed, and the guard names prisoner B. How should prisoner A now assess his chances of survival?