HW 2

Group 1 **Grade:**

A committee of 7 people has to be chosen among 11 women and 8 men. How many different ways can be chosen if there must be more women than men.

Group 2 **Grade:**

let A and B be events with probability $\mathbb{P}(A) = 3/4$ and $\mathbb{P}(B) = 1/3$, show that $1/12 \leq \mathbb{P}(A \cap B) \leq 1/3$.

Group 3 **Grade:**

Prove that $\binom{n+1}{r} = \binom{n}{r} + \binom{n}{r-1}$

Group 4 **Grade:**

A box contains 30 red balls, 30 white balls, and 30 blue balls. If 10 balls are selected at random, without replacement, what is the probability that at least one color will be missing from the selection?

Group 5 **Grade:**

If the probability that student A will fail a certain examination is 0.5, the probability that student B will fail the examination is 0.2, and the probability that both student A and student B will fail the examination is 0.1, what is the probability that at least one of these two students will fail the examination?