Homework of Week 1

Deadline: 9:00am, September 24th (Thursday), 2021

1. Calculate the probability that the sum of n independent dice is divisible by 6. (Hint: you may complete the partial solution in the lecture notes.)

2. Formally define the event that a random variable X is greater than another one Y.

3. Show whether or not the linearity of expectation remains true for any linear combination of countably many random variables.

4. Do Bernoulli experiment for 20 trials, using a new 1-Yuan coin. Record the result in a string $s_1 s_2 \cdots s_{20}$, where s_i is 1 if the i^{th} trial gets Head, and otherwise is 0.