

Homework of Week 1

Deadline: 9:00am, October 29th (Thursday), 2020

1. Prove that any geometric random variable is memoryless.
2. Prove that any memoryless random variable is geometric.
3. Calculate the probability that the sum of n dice is divisible by 6. (Hint: you may complete the partial solution in the lecture notes.)
4. Do Bernoulli experiment for 20 trials, using a new 1-Yuan coin. Record the result in a string $s_1s_2s_3\cdots s_{20}$, where s_i is 1 if the i^{th} trial gets Head, and otherwise is 0.