Your solutions should contain clearly identified numerical answers and well labeled tables/figures, where appropriate. Make sure to include clear and concise interpretations (that is, clear, full sentences) of any values, figures, and responses to queries posed. Place all code in an appendix, at the end of your solutions document.

1. Roulette wheel simulation: A roulette wheel has 38 slots of which 18 are red, 18 are black, and 2 are green. If a ball spun on to the wheel stops on the color a player bets, the player wins. Consider a player betting on red. Game streaks follow a Geometric(p=20/38) distribution derivation of the Geometric distribution from the Bernoulli distribution to simulate the game. Namely, generate Bernoulli (p=20/38) random variates until a black or green occurs. Run 1000 simulations and report the following: