

June 19th, 2021

Name _____

SWMS- Worksheet 6 in Probability and Statistics

1. How many games would we expect to be needed to complete a best-of-seven series if each team has a 50 percent chance of winning each individual game? How about if one team has a 60 percent chance of winning each game? How about 70?

2. It's my 30th birthday, and my friends bought me a cake with 30 candles on it. I make a wish and try to blow them out. Every time, I blow out a random number of candles between one and the number that remain. How many times, on average, do I blow before all the candles are extinguished?

3. You take half of a vitamin every morning. The vitamins are sold in a bottle of 100 (whole) tablets, so at first you have to cut the tablets in half. Every day you randomly pull one thing from the bottle if it's a whole tablet, you cut it in half and put the leftover half back in the bottle. If it's a half-tablet, you take the vitamin. You just bought a fresh bottle. How many days, on average, will it be before you pull a half-tablet out of the bottle?

Solutions to problem 1 and 2 codes: <https://www.dropbox.com/s/i2a3kn6kf4o9ets/work6.R?dl=0>