Homework 10

Name_____

According to Krantz (1991, pg. 161), the probability of being injured by lightning in a given year is 1/685,000 or 1.460×10^{-6}. Assume this probability remains constant year to year.

1.) Is this most likely a theoretical probability calculation, a Monte Carlo simulation, or a personal estimate?

2.) If there are 260 million people in the United States, about how many of them would you expect to be injured by lightning in a year?

3.) What is the probability that you will not be struck by lightning in a given year?

4.) Using Excel, calculate the probability of not getting injured by lightning during a lifetime of 70 years. Write your code and the result.

5.) According to Krantz, the probability of getting injured by lightning over an average lifetime is 1 in 9100. Use the "not" rule with your result in #4, and compare these two estimates. Do they agree?

6.) What property must the event of "getting struck by lightning in a given year" have to make the above calculations? In other words, what have you assumed and what does it mean in terms of this example?