Congratulations! You passed!

TO PASS 80% or higher

Keep Learning

GRADE
100%

Week 2 - Problem Set

LATEST SUBMISSION GRADE
100%

1. Consider the following five events: 1 / 1 point

    1. Correctly guessing a random 128-bit AES key on the first try.
    2. Winning a lottery with 1 million contestants (the probability is $1/10^6$).
    3. Winning a lottery with 1 million contestants 5 times in a row (the probability is $(1/10^6)^5$).
    4. Winning a lottery with 1 million contestants 6 times in a row.
    5. Winning a lottery with 1 million contestants 7 times in a row.

    What is the order of these events from most likely to least likely?

    - 2, 3, 1, 4, 5
    - 2, 3, 4, 5, 1
    - 3, 2, 5, 4, 1
    - 2, 3, 4, 1, 5

    Correct

    - The probability of event (1) is 1/2^128.
    - The probability of event (5) is 1/(10^6)^7 which is about 1/2^{139}. Therefore, event (5) is the least likely.
    - The probability of event (4) is 1/(10^6)^6 which is about 1/2^{119.5} which is more likely than