

Chapter 7.4
Wednesday, Week 6

Warmup

Here is a fun game: You roll a die and get that many dollars. How much would you be willing to pay in order to play this game?

Here is another fun game: I give you a dollar! How much would you be willing to pay in order to play this game?

A third game: I flip a coin. Heads, I give you ten thousand dollars. Tails, you give me five thousand. Do you want to play?

Expectations

Roll a pair of dice. What is the expected value of the total rolled?

Give an intuitive explanation of your answer above.

What is the average of $\{271, 275, 279, 283, 285\}$? (Do not find the sum and then divide by 5!)

Independent Random Variables

A red die and a blue die are rolled and the sum of the numbers is 2. What is the product of the numbers?

The dice are rolled again and the sum of the numbers is 5. What can you say about the number on the red die?

The dice are rolled again and the blue die lands on a 4. What can you say about the number rolled by the red die?

Outcome of a Fair Coin: Weird or Normal?

- HHHHHHHHHHHHHHHHHHHHHHHHH
- HHHHHHHHHHHTTTTTTTTTTTT
- HTHTHTHTHTHTHTHTHTHT
- THHTTTHTHTTHHHHHHTHTT
- 10 coins flipped: 8 heads, 2 tails
- 10000 coins flipped: 6530 heads, 3470 tails
- 10000 coins flipped: 5000 heads, 5000 tails