

Seatwork (Probability)

Show your solutions.

1. Suppose you're rolling two fair dice, and flipping two fair coins, arrange the following outcomes from least likely to most likely:
 - a. The sum of dice rolls are 6 and there are two heads.
 - b. Neither of the dice rolls exceed 2* and the two coins have the same outcome.
 - c. At least one dice roll is even and the two coins are tails

*each individual die roll is not great greater than 2

3. I'm given three sealed unlabelled boxes to choose from called A, B, and C. Suppose these are the contents of the boxes;

- **Box A** - 213 centipedes, 43 razor blades, 4 spiders
- **Box B** - 101 centipedes, 43 razor blades, 33 spiders
- **Box C** - 45 centipedes, 200 razor blades, 50 spiders

I choose a box randomly.

While closing my eyes, I reach my hand in the box.

I pick something at random.

My nervous system shuts down so I do not feel what it is.

I open my hand.

A spider emerges.

It is my worst nightmare.

What is the probability that the box I picked is Box A, given that the randomly picked object inside turned out to be a spider?

4. **BONUS:** About 13.5% of Americans are Spanish speakers. While about 94.4% Chileans are Spanish speakers. Supposing you put all Americans and Chileans in one room. You then pick a random person from that room, and that person turned out to be a Spanish speaker. Which of the following is more likely?

- The Spanish speaker is American
- The Spanish speaker is Chilean

And why?