STAT:1020 discussion - week8

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Problem 1. Sample spaces

1) For each of the following, list the sample space and tell whether you think the events are equally likely

    1. Roll one die, recore the numbers that you have.
    2. Roll two dice, recore the sum of the numbers.
    3. Toss four coins, recore the number of tails.

Problem 2. Dice

1) Let us assume that we have thrown a fair die whose color is black. A fair dice means that it has an equal probability of having each number.

    1. Find the chance that the die shows three spot.
    2. Find the chance that the number on the die is less than two.
    3. Find the chance that the number on the die is larger than two.

2) Your friend gave you a white die to you. Now you have thrown a pair of dice.

    1. Find the chance that both dice show three spot.
    2. Find the chance that the numbers on the dice are the same.
    3. Find the chance that the number on the black die is larger than the one on the white die.

Problem 3. Eletronics (Addition Rule, textbook ch.13, ex 33)

1) Suppose that 38% of families living in a certain country own a computer and 52% own an HDTV. The Addition Rule might suggest, then, that 90% of families own either a computer or an HDTV. What's wrong with that reasoning?

2) It turns out that there are 21% of families own an HDTV and a computer.

    1. Draw the Venn diagram for this situation.
    2. What's the probability that a randomly selected family has a HDTV but no computer?
    3. What's the probability that a randomly selected family has a HDTV, or a computer?
    4. What's the probability that a randomly selected family has a HDTV, or a computer, but not both?
    5. What's the probability that a randomly selected family has neither a HDTV nor a computer?