

STAT:1020 discussion - week9

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March 11, 2019

Problem 1. Coins, cards, and dice.

- 1) You throw three fair coins.
 1. Find the probability that all the coins are heads.
 2. Find the probability that NONE of the three coins are heads.
 3. Find the probability that the coins are NOT ALL heads.
 4. Find the probability that at least one of the coins is a head.
- 2) Now, three fair dice were thrown.
 1. Find the probability that all the numbers on dice are two.
 2. Find the probability that NONE of the three numbers on dice are two.
 3. Find the probability that the numbers of dice are NOT ALL two.
 4. Find the probability that AT LEAST ONE of the numbers is two.
 5. Find the probability that the minium number is larger than three.
- 3) Three cards are dealt from a well shuffled deck.
 1. Find the probability that all the cards are hearts.
 2. Find the probability that NONE of the three cards are diamonds.
 3. Find the probability that the cards are NOT ALL diamonds.
 4. Find the probability that at least one of the cards is heart.

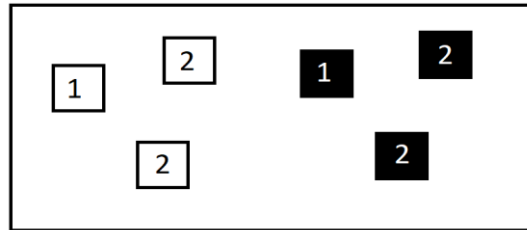
Problem 2. Conditional probability

		Blood pressure	
Cholesterol	High	High	OK
	High	0.11	0.21
	OK	0.16	0.52

- 1) (Textbook. Ex. 59) The probability that an adult Amerian man has high blood pressure and/or high cholesterol are shown in the table. What's that probability that
 1. a man has both conditions?
 2. a man has high blood pressure?
 3. a man with high blood presure has high choesterol?
 4. a man has high blood pressure if it's known that hs has high cholesterol?
- 2) Given the table of probabilities from above, are high blood pressure and high cholesterol independent? Explain.

Problem 3. Independence

Let us assume that we have a box which has the following 6 balls.



Determine whether the color and number are dependent or independent.