STAT:1020 discussion - week 11

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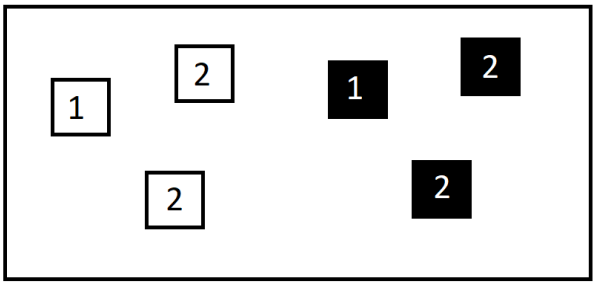
Problem 1. Conditional probability

		Blood pressure	
		High	OK
Cholesterol	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 2. 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.

Problem 3. Tree Diagrams (Textbook Ex. 83 adjusted)

Dan's Diner employs three diswashers. Al washes 40% of the dishes and breaks only 1% of those he handles. Betty and Chuck each wash 30% of the dishes, and Betty breaks only 1% of hers, but Chuck breaks 30% of the dishes he washes.

1) You went to Dan's and found a dish which need to be washed at the sink. What is the probability that Chuck breaks this dish.

2) While you are having dinner, you hear a dish break at the sink. What is the probability that Chuck is on the job?