Lesson 13-1

4/26/11 Measures of Central Tendency (p730-735)

(3) Measure of Central Tendency: A number from a set of data used to describe the center

① Median (MIDDLE) = The middle number in a set of data ordered from least to greatest

ex: ~~16~~, 18, ~~15~~, ~~16~~, 21, ~~16~~

→ 15, 16, 16, 16, 18, 21

Median = 16

* Even amount = average the two middle #'s
* odd amount = take the middle #

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② MODE = the number that occurs the most often

ex: 15, 16, 16, 16, 18, 21 mode = 16

ex: 7, 7, 8, 10, 11, 12, 12, 19 mode = 7, 12

③ Mean (AVERAGE) = the sum of the data divided by the # of items

ex: $15+16+16+16+18+21 = \frac{102}{6} = 17.0$

Lesson 13-6 (p 765-770)

4/27/11 Theoretical & Experimental Probability

Theoretical Probability - what should occur in an experiment

Experimental Probability - what actually occurs when repeating the experiment many times

* The more trials, the closer the experimental probability will be to the theoretical probability.

ex: A bag contains 8 pink, 2 white, and 4 blue marbles. Find the probability that a pink marble is chosen.

Theoretical Probability

$$P(\text{event}) = \frac{\#\text{ of favorable outcomes (what you want)}}{\#\text{ of possible outcomes (total)}}$$

$$P(\text{pink}) = \frac{8}{14}$$

$$\frac{4}{7} \approx 57.1\%$$

odds: in favor of an event... is the ratio that compares the number of ways the event can occur to the number of ways the event cannot occur

experimental probability

$$P(\text{event}) = \frac{\#\text{ of favorable outcomes that have happened}}{\#\text{ of outcomes that have happened}}$$

ex: Ten marbles are selected from a bag of colored marbles. The results are shown in the table. Find the experimental probability of selecting a red marble.

outcome	frequency
red	4
Blue	2
Yellow	4

$$P(\text{red}) = \frac{4}{10}$$

$$\boxed{\frac{2}{5},\ 40\%}$$

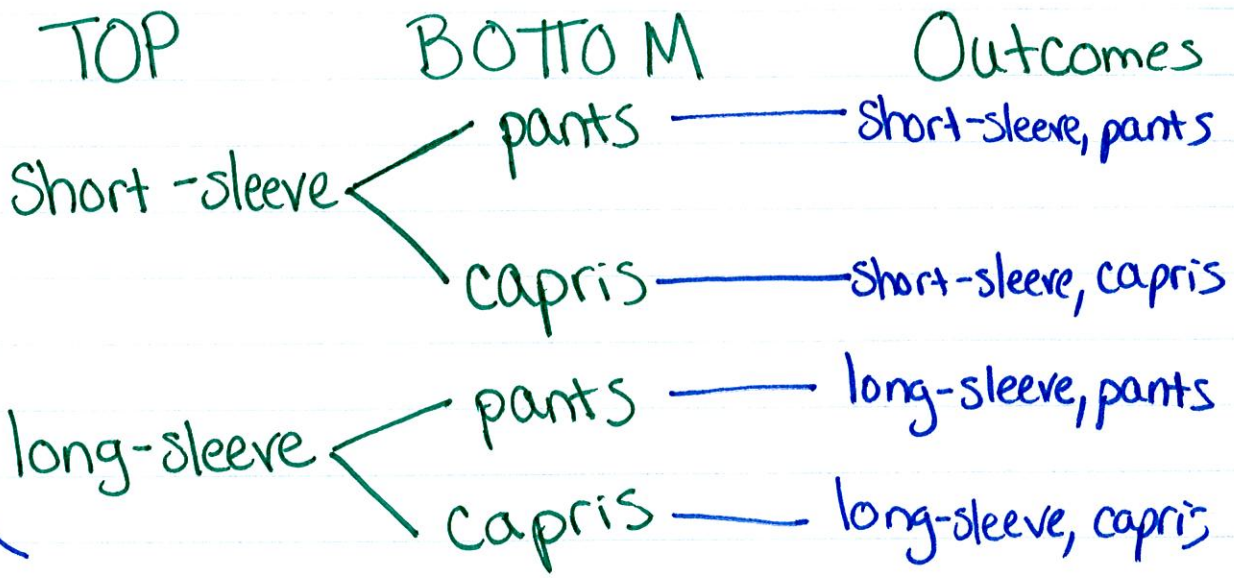
Lesson 13-8

5/2/11 Counting Outcomes (p 777-781)

Sample Space: the set of all possible outcomes

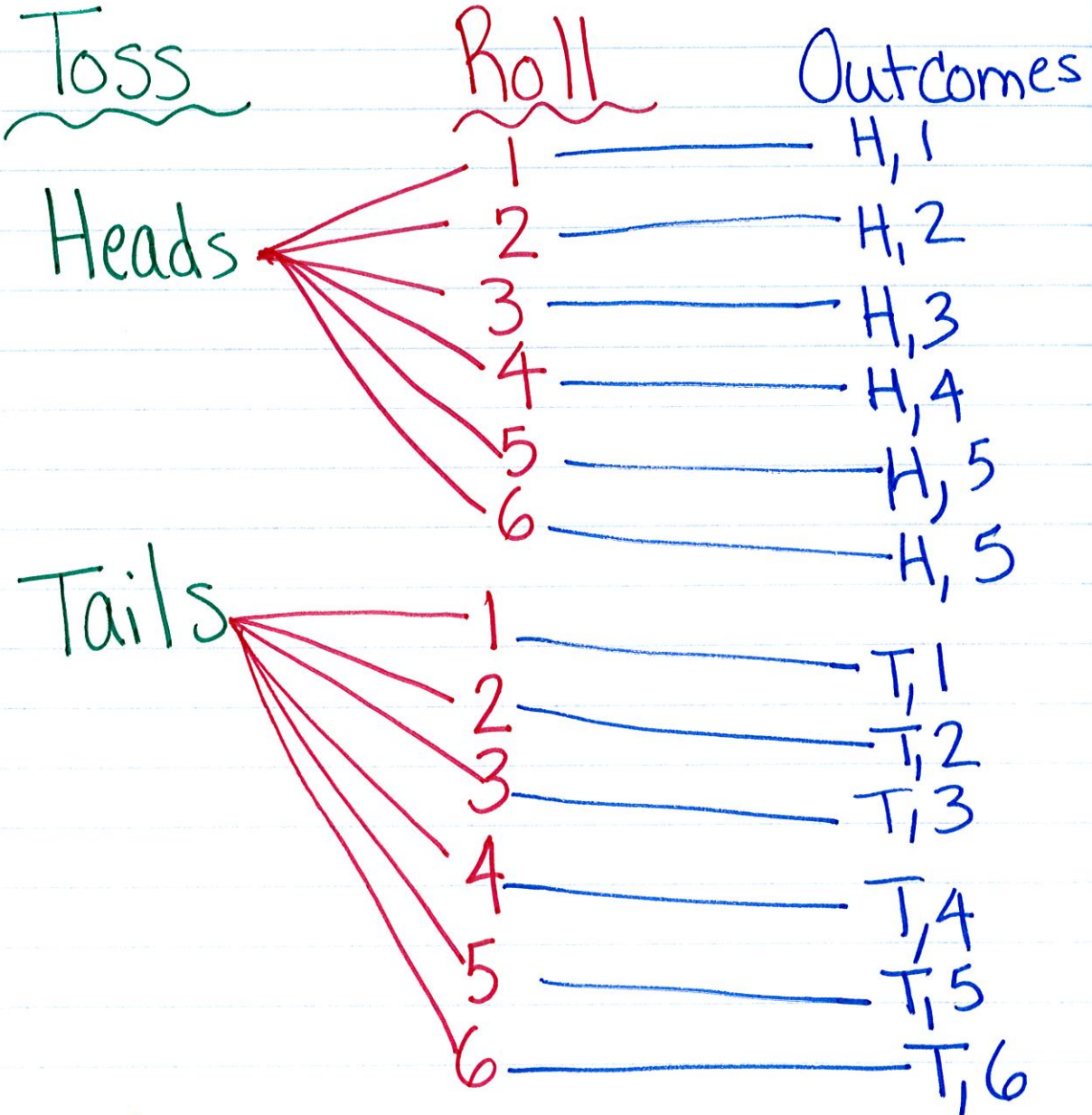
ex: Mrs. Davis can't decide what to wear to school. She wanted to wear either pants or capris for bottoms and a short-sleeve or long-sleeve shirt for a top. Use a tree diagram to find the number of outcomes for the situation.

TREE Diagram



*There are 4 possible outcomes :)

ex: Find the sample space for tossing a coin and then rolling a cube:



*There are 12 possible outcomes

The Fundamental Counting Principle:

This principle uses multiplication, instead of a tree diagram or chart, to find the number of possible outcomes in a sample space

How many events do I have?

ex: Toss a coin, then roll a cube:

Event #1: Toss → 2 (possible outcomes) × Event #2: Cube → 6 (possible outcomes) = 12 outcomes

ex: Tossing 2 coins, rolling 2 cubes:

Coin #1 → 2 × Coin #2 → 2 × Cube #1 → 6 × Cube #2 → 6 = 144 outcomes

ex: Choosing a 4-letter password using only vowels:

Vowel #1 → 5 × Vowel #2 → 5 × Vowel #3 → 5 × Vowel #4 → 5 = 625 outcomes