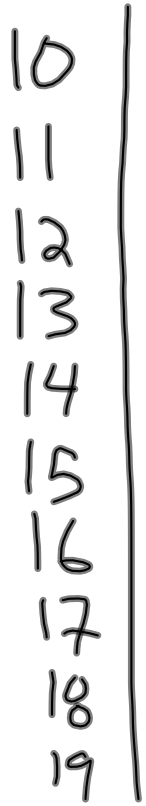
Homework Review - 13.7 and 13.8



$10|3 = 103$

In a recent survey, it was reported that of drivers who recently got in an accident, 75% of them were NOT eating food when they crashed their car. Is it therefore safer to eat while driving? Why or why not?

100 accidents
75 not eating
25 eating

100000 drivers
90000 not eating
10000 eating

.1/100 crashed
.08/100 crashed
.25/100 crashed

100% of male CV students over 6 feet tall wear shoes that are at least size 9. My friend wears shoes that are size 10. Is he over 6 feet tall? Why or why not?

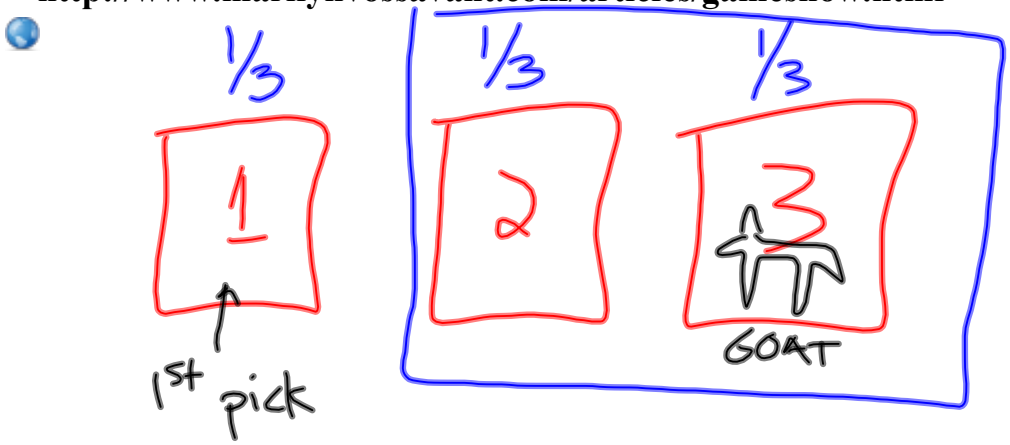
> 6' tall → 9+ shoes

9+ shoes ↛ > 6' tall

correlation not cause/effect

height	shoe
6'1"	10.5
7'11"	13
5'4"	7.5
5'8"	10

http://www.marilynvossavant.com/articles/gameshow.html



SWITCHER	
1	+
2	−
3	+
4	.
5	.
6	.
7	
.	
.	
.	

STAYER	
1	+
2	−
3	−
4	
5	
6	
.	
.	
.	

Switch

$\frac{7}{10}$ $\frac{7}{10}$ $\frac{5}{10}$ $\frac{10}{10}$ $\frac{6}{10}$ $\frac{7}{10}$ $\frac{6}{10} = \frac{6.85}{10}$

Stay

$\frac{3}{10}$ $\frac{6}{10}$ $\frac{1}{10}$ $\frac{7}{10}$ $\frac{6}{10}$ $\frac{0}{10} = \frac{3.83}{10}$

Eight swimmers participate in a race. In how many ways can the swimmers finish in first, second, and third place?

order matters

Permutations (order matters) $= {}_nP_r = \frac{n!}{(n-r)!}$

Combinations (order doesn't matter) $= {}_nC_r = \frac{n!}{(n-r)!r!}$

$$\frac{8!}{(8-3)!} = \frac{8 \cdot 7 \cdot 6 \cdot 5!}{5!} = 336$$

In Exercises 11 and 12, refer to a bag containing 12 tiles numbered 1–12.

11. You choose a tile at random. What is the probability that you choose a number less than 10 or an odd number.

12. You choose a tile at random, replace it, and choose a second tile at random. What is the probability that you choose a number greater than 3, then an odd number.

independent

$$P(A \text{ or } B) = \frac{9+6-5}{12} = \frac{5}{6}$$

(A: 9, B: 6)

$$P(A \text{ and } B) = \frac{3}{4} \cdot \frac{1}{2} = \frac{3}{8}$$

($\frac{9}{12} = \frac{3}{4}$, $\frac{6}{12} = \frac{1}{2}$)

Homework:

Chapter 13 Review - p. 896 - 900
Odds required; evens optional