Warm up: 1/19/18 - ACT Sheet

LT: Use a two-way table to determine if events are independent.

Jaime investigated hair and eye color (blue eyes or other). He found that 15 students had light-colored hair and 15 had dark-colored hair. 13 students had blue eyes. Also, 8 had light-colored hair and blue eyes. Create a two-way table.

	Blue	other	Total
dark	5	10	15
light	8	7	15
Total	13	17	30

Is the event "light-colored hair" independent from the event "blue eyes"? Why?

If P(A) = P(A|B), then we know that event A is independent from event B. In other words, event A does not depend on event B.

So, is the event "light-colored hair" (A) independent from the event "blue eyes" (B)?

$P(L) = \frac{15}{30} = \frac{1}{2} = .5$ $P(L|B) = \frac{8}{13} = .62$

$P(L) \neq P(L|B)$

Not independent.

Students were swimming in a pool or racing outside of the pool on the deck. It was found that 70 students were swimming and 22 of those students were racing. 70 students were not swimming and 45 of those students were racing.

a) Create a two-way table of the data

	Racing	Not Racing	Total
Swimming	22	48	70
Not Swimming	45	25	70
Total	67	73	140

b) P(racing) = 67/140

c) P(swimming|not racing) = 48/73

d) Are the events "swimming" and "racing" independent of each other?

P(S) = 70/140 P(S|R) = 22/67

=0.5 = 0.33

They are not independent of each other!

Mon Quiz
- Prob basics
- Theoret. VS Exper.
- ME VS Non ME
- Indep VS Dep.
- Conditional
- Indep of Conditional
- Two-Way Tables