Wednesday, December 12, 2018

$P(L|F) \stackrel{?}{=} P(L)$

$P(R|M) \stackrel{?}{=} P(R)$

$P(M|R) \stackrel{?}{=} P(M)$

- Warm-up
  - According to the given data is gender independent of handedness?

$P(F) \stackrel{?}{=} P(F|R)$

$\dfrac{53}{121} \stackrel{?}{=} \dfrac{46}{109}$

$0.43 \stackrel{?}{=} 0.42$

because the probability of a female given right handedness is equal to a female those events are independent

Gender compared to handedness

	Handed		
	Left	Right	
Female	7	46	53
Male	5	63	68
	12	109	121

- Talk about tests

- Review Simulations

Test Reflection

- Take a sheet of paper and fold it into 4's

Overall Test	2 missed MC
• How did you prepare? • Why were you successful (or not successful)?	• What did you choose? Why? • What should you have chosen? Why?
Worst FR	**Worst FR Fix**
• How did you prepare? • Why weren't you successful?	• Rework that problem – explaining what you now understand.

Simulation Review

- Suppose a person is taking a 5 question True/False Quiz and makes random guesses for each question. What values are in the sample space? F T → C or I

  - What are the probabilities of each value (equally likely?)? yes

  - Using the given random number table, design a simulation to determine the probability of correctly answering at least 3 out of 5 questions. 75%

	odd	even
	0-4	5-9
	1	2
	1	0

T T T T T
F

```
73735  45963  78134  63873
02965  58303  90708  20025
98859  23851  27965  62394
33666  62570  64775  78428
81666  26440  20422  05720
```
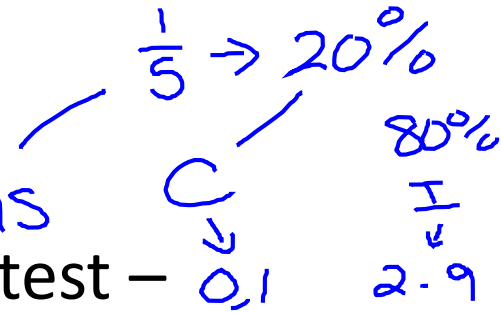
60%   60%   60%   100%

  - Run your simulation.
  - Write your conclusion.
  - How does that compare to the theoretical probability?

Modify

$$\left(\frac{1}{5}\right)^6 \left(\frac{4}{5}\right)^4 = 0.00626$$

$$(0.20)^6 (0.8)^4 =$$

5 options

$\frac{1}{5} \rightarrow 20\%$

80%

$C \atop \downarrow \atop 0.1$ $\quad I \atop \downarrow \atop 2.9$

- Now it is a ⟨10⟩ question multiple choice test – simulate the probability of "passing" the test (60% or better)

- Compare to the theoretical probability of getting every answer correct.

More MC with probability