Be sure you to look at the
3-week calendar which includes a
tentative review schedule .

Pick Up The
Warm Up
Just do #1ab

skip #2

Determine which chi-square test is appropriate in each of the following settings. Explain your reasoning. Do not carry out the test!

(a) Have older cell-phone users caught on to texting? A random sample of individuals who are less than 30 years old and a random sample of individuals who are at least 30 years old were asked if they make more phone calls or send more text messages on their cell phone on a typical day. Here are the results:

		Age group		
		Less than 30	At least 30	Total
Response to	More texts	146	32	178
question	More phone calls	34	98	132
	Total	180	130	310

Data from: 2 - independ. rand. samples
(less than 30 , at least 30)

↓

Chi-Sqare Test for Homogeneity

(b) Are older and younger employees equally prone to having accidents? To investigate this question, a researcher at a light manufacturing plant classified a random sample of accidents by type and by age of the employee.

		Accident type			
		Sprain	Burn	Cut	Total
	Less than 25	9	17	5	31
Age	At least 25	61	13	12	86
	Total	70	30	17	117

Data from: Single random sample (n=117 accidents)
with accident classified according to
two categorical variables

↓

Chi-Square Test for Independ.

② Mrs. Overstreet is studying fathers' involvement in their children's education. She interviews a random sample of fathers of school-age children in a large school district. One question concerns regularly scheduled parent-teacher conferences. Here is a two-way table of the results:

| | | Attendance rate | | | |
		Attended all	Attended some	Attended none	Total
Family type	Two-parent	109	132	203	444
	Single-parent	15	10	13	38
	Non-resident father	11	5	82	98
	Total	135	147	298	580

The segmented bar graph (provided below) illustrates the relationship between these two variables. Describe what you see.
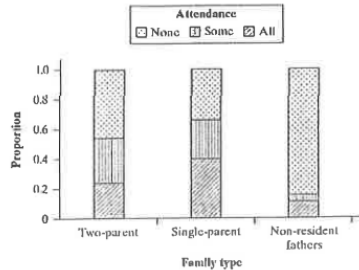
The more direct responsibility fathers have for their daily care of their children, the more likely they are to attend parent-teacher conferences.

fathers in one-parent families are most likely to attend all conferences; non-resident fathers rarely attend any conferences

On the back is one of many things you can do to prepare for tomorrows Ch. 11 Test.

Ch. 3 Review Problems (green)

due by the beginning of class on this Wednesday

By tomorrow (Tuesday night 11 pm), you should be finished with all of the PPC's (Unit 5 - MCQ A,B,C)

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on a Chi-Square test

"DO" section

You must clarify where the P-Value is coming from

OPTIONS →

$$\chi^2 = \frac{(102-50)^2}{50} + \frac{(48-50)^2}{50} + \cdots \approx 13.14$$

P-Value $\approx$ .062   from Table C   df = $(4-1)(2-1) = 3$
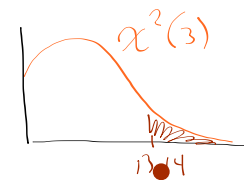

$$\chi^2 = \frac{(102-50)^2}{50} + \frac{(48-50)^2}{50} + \cdots \approx 13.14$$

P-Value $\approx$ .062   from Table C   df = $(4-1)(2-1) = 3$

OR

$$\chi^2 = \frac{(102-50)^2}{50} + \frac{(48-50)^2}{50} + \cdots \approx 13.14$$

$\chi^2 \text{cdf} \left(\underset{\text{Lower}}{13.14}, \underset{\text{Upper}}{1000}, 3 \right) \approx 0.062$

$$\chi^2 = \frac{(102-50.1)^2}{50.1} + \frac{(48-50.1)^2}{50.1} + \cdots \approx 13.14$$

P-Value $\approx$ .062 from Table C df $= (4-1)(2-1) = 3$

OR

$$\chi^2 = \frac{(102-50.1)^2}{50.1} + \frac{(48-50.1)^2}{50.1} + \cdots \approx 13.14$$

$$\chi^2 cdf \left(\begin{matrix} 13.14 \\ \text{Lower} \end{matrix}, \begin{matrix} 1000 \\ \text{Upper} \end{matrix}, 3 \right) \approx 0.062$$

$$\chi^2 = \frac{(102-50.1)^2}{50.1} + \frac{(48-50.1)^2}{50.1} + \cdots \approx 13.14$$

P-Value $\approx$ .062 from Table C df $= (4-1)(2-1) = 3$

OR

$$\chi^2 = \frac{(102-50.1)^2}{50.1} + \frac{(48-50.1)^2}{50.1} + \cdots \approx 13.14$$

$$\chi^2 cdf \left(\begin{matrix} 13.14 \\ \text{Lower} \end{matrix}, \begin{matrix} 1000 \\ \text{Upper} \end{matrix}, 3 \right) \approx 0.062$$

OR

Calculator's χ^2-Test gives $\chi^2 = 13.14$ and P-Value $\approx$ .062 using df $= 3$
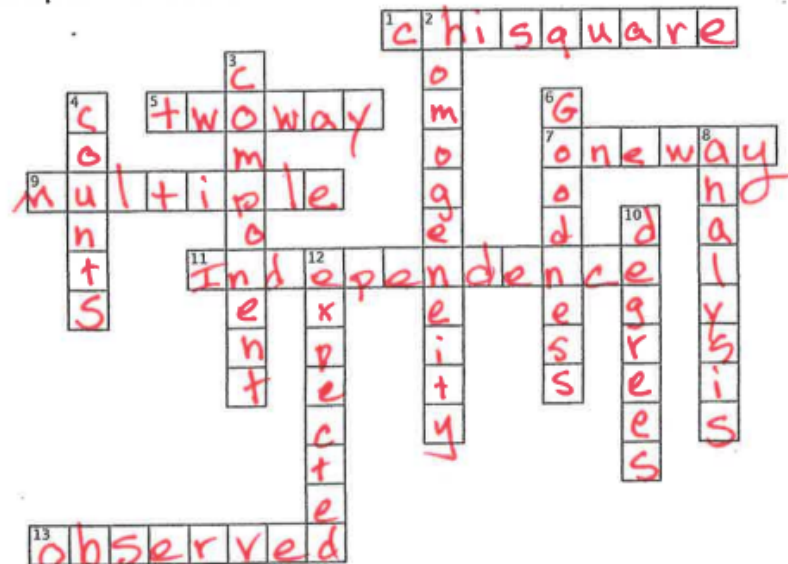
or χ^2-GOF-Test

If asked to do a
"follow up analysis"

~ point out at least the largest
contribution value

<u>and</u> add context to it

about 17 more pieces than expected
from the first group.

Chapter 11: Inference for Distributions of Categorical Data

Frappy!

Strive for a 5
Crossword
Puzzle

Prepare

LCQ 11.2 (#2)

AP Ch. 11
Practice Test

Ch.11 Review Exerces
with video solutions