

Homework 3

Due 9/18

- In your own words, what are ingredients, amounts, operations, and order in reference to statistical formulas?

Table 2.4 Postponement and Math/Statistics Anxiety

(X) Number of Terms Taking Statistics Has Been Postponed	(Y) Level of Math/Statistics Anxiety
1	3
2	3
2	3
3	2
3	4
2	4
3	5
3	5
4	5
4	7

- The data set (X) found in Table 2.4 represents the number of school terms 10 social science majors have put off taking a required statistics class. The second data set, Y, is each student's measured level of math/statistics anxiety. Use these data sets to complete the following exercises on algebraic order and summation notation.

- | | | | |
|----------------------------|----------------------------|---------------------------|----------------------------|
| a. ΣX | b. ΣY | c. $(\Sigma X)^2$ | d. $(\Sigma Y)^2$ |
| e. ΣX^2 | f. ΣY^2 | g. $\Sigma X^2 - 1$ | h. $(\Sigma Y)^2 - 1$ |
| i. $\Sigma(X-1)$ | j. $\Sigma(Y-1)^2$ | k. $(\Sigma X)(\Sigma Y)$ | l. $\Sigma Xi_{i=3}^{N=7}$ |
| m. $\Sigma Yi_{i=2}^{N=5}$ | n. $\Sigma Yi_{i=3}^{N=9}$ | | |

- For each of the following variables, define what level of measurement they are: nominal, ordinal, interval-ratio.

- | | | |
|--------------|---------------|-------------------------|
| a. age | b. hair color | c. an attitudinal scale |
| d. height | e. IQ | f. religion |
| g. your name | h. gender | i. income |

- Now determine if these same variables are discrete or continuous.



Table 2.5 Cartoon Characters' Weekly Beer Consumption Data Set

<i>Number of Beers Consumed Weekly by Cartoon Characters</i> X	<i>Number of Minutes Required to Drink a Beer</i> Y
1	17
2	15
4	14
4	12
5	11
6	8
7	7
7	7
9	6
10	3
11	2
12 (Hagar's Answer)	2

5. The data set (X) found in Table 2.5 represents the number of school terms 10 social science majors have put off taking a required statistics class. The second data set, Y, is each student's measured level of math/statistics anxiety. Use these data sets to complete the following exercises on algebraic order and summation notation.

- a. ΣX b. ΣY c. $(\Sigma X)^2$ d. $(\Sigma Y)^2$ e. ΣX^2 f. ΣY^2
- g. $\Sigma X^2 - 1$ h. $(\Sigma Y)^2 - 1$ i. $\Sigma(X-1)$ j. $\Sigma(Y-1)^2$ k. $(\Sigma X)(\Sigma Y)$ l. ΣXY
- m. $\Sigma(X + Y)$ n. $\Sigma X + \Sigma Y$ o. $\Sigma Xi_{i=3}^{N=12}$ p. $\Sigma Yi_{i=2}^{N=7}$ q. $\Sigma Yi_{i=5}^{N=9}$

6. For the following use Summation Notation Symbols to express as formula, what is being asked for in words. Be sure to appropriately employ the rules of algebraic order.

- a. Add all the scores for measure Y and then square the value.
- b. Square all of the scores for measure X and then add them up.
- c. Square all of the scores for measure Y. Next, add them up. Finally, subtract 1 from this value.
- d. Add all the scores for measure X, then add all of the scores for measure Y, and then multiply the two sums together
- d. Multiply each of the scores for measure X by their corresponding score for measure Y, then add the resulting values up

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