

9.7.2: Chapter 7 Chi-Square - Test of Independence (Worksheet)

Name: _____

Section: _____

Student ID#: _____

Work in groups on these problems. You should try to answer the questions without referring to your textbook. If you get stuck, try asking another group for help.

9.7.2.1 - Student Learning Outcome

- The student will evaluate if there is a significant relationship between favorite type of snack and gender.

9.7.2.2 - Collect the Data

- Using your class as a sample, complete the following chart. Ask each other what your favorite snack is, then total the results.

NOTE: You may need to combine two food categories so that each cell has an expected value of at least five.

Favorite type of snack					
	sweets (candy & baked goods)	ice cream	chips & pretzels	fruits & vegetables	Total
male					
female					
Total					

- Looking at [Table](#), does it appear to you that there is a dependence between gender and favorite type of snack food? Why or why not?

9.7.2.3 - Hypothesis Test

Conduct a hypothesis test to determine if the factors are independent:

- H_0 : _____
- H_a : _____
- What distribution should you use for a hypothesis test?
- Why did you choose this distribution?
- Calculate the test statistic.
- Find the p -value.
- Sketch a graph of the situation. Label and scale the x -axis. Shade the area corresponding to the p -value.


 Blank graph with vertical and horizontal axes.

Figure 11.9.1.

- State your decision.
- State your conclusion in a complete sentence.

9.7.2.4 - Discussion Questions

- Is the conclusion of your study the same as or different from your answer to question two under [Collect the Data](#)?
- Why do you think that occurred?

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