

Name: _____

Date: _____

12.5 Notes: Two-Way Frequency Tables

Algebra I

Warm-up: Percent Review

- a) Fourteen out of 70 ninth graders like the Buffalo Bills. What percentage of ninth graders like the Buffalo Bills?

- b) There are 183 girls in tenth grade, and 45 of them do not like math. What percentage of the girls like math?

- c) 56% of the 3000 students attended the homecoming game. How many students attended the game?

Vocabulary:

Two-Way Frequency Table – A table used to present data from a survey focused on 2 or more groups of people, and 2 or more categories.

Marginal Frequency – Entries in the "Total" row and "Total" column

Joint Frequency – Entries in the body of the table

Survey 1: Determine how many boys and girls in your class would choose plain cheese pizza or pepperoni pizza. Fill in the following Two-Way Frequency Table based on the results of the survey, and answer the questions that follow.

	Cheese	Pepperoni
Girls		
Boys		

- a) How many girls were surveyed?
- b) How many boys were surveyed?
- c) How many students would choose cheese?
- d) How many students would choose pepperoni?
- e) How many students were surveyed in all?
- f) What percentage of the students would choose cheese?
- g) What percentage of the students would choose pepperoni?
- h) What percentage of the girls would choose cheese?
- i) What percentage of the boys would choose cheese?
- j) Girls who prefer cheese pizza make up what percentage of the students?
- k) If there are 650 girls in the high school, how many would you expect to choose cheese pizza, based on the results of this survey?
- l) Is this a reasonable prediction based on this survey?

Survey 2: Marisa surveyed some students at her school. She found that 30 out of 75 surveyed seventh graders buy their lunch. There are 25 out of 76 surveyed eighth graders who do not buy their lunch. Construct a two- way table summarizing the data.

Create a table using the two categories: buy lunch and grade level. Fill in the table with the given values.

	Buy Lunch	Do Not Buy Lunch	Total
Seventh Graders	30		75
Eighth Graders		25	76
Total			

- a) What percentage of eighth graders surveyed buy their lunch?

- b) Based on this sample, predict how many of the school's 223 Seventh Graders **do not buy lunch**.

Exercise 3: A statistics class surveyed some students during one lunch period about their movie preferences. The results of the survey are summarized below.

	Comedy	Action	Romance
Male	23	13	45
Female	17	33	9

- a) Based on the sample, predict how many of the school's 350 students like action movies.

- b) Based on the sample, predict how many of the school's 210 male students like romance movies.

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Algebra I

1. A large group of people was surveyed about their favorite movie genre. The participants had to give their age and choose their favorite genre from Action, Comedy, and Horror.

	Action	Comedy	Horror
18-25 years old	238	450	312
26-49 years old	350	472	178
50 + years old	320	490	190

- a) What percentage of the 26-49 years old, like Action movies?
- b) What percentage of the 50+ year olds' favorite genre is Comedy or Horror?
- c) If you surveyed 12,000 people total, how many 18-25 years old would you expect to choose Horror as their favorite genre?
- d) If you surveyed 24,000 people total, how many 26-49 years old would expect to choose Comedy as their favorite genre?

2. The following two-way table shows the number of different color cars and SUV's at a car dealership. What color is the most popular at the dealership?

- A. White
B. Red
C. Green
D. Blue

Color	Car	SUV
Red	35	25
White	15	10
Blue	40	15
Green	20	5

3. Complete the two-way table for 9th grader's school transportation survey:

	Male	Female	Total
Walk		46	
Car	28		45
Bus		12	27
Bike		17	70
Total	130	92	

a) What percentage of 9th grade girls walk to school?

b) What percentage of 9th grade boys take the bus or a bike to school?

4. Jeremy asked a sample of 40 9th grade students whether or not they had a curfew. He then asked if they had set bedtime for school nights. He recorded his data in this two-way frequency table.

	Bedtime	No Bedtime
Curfew	21	4
No Curfew	3	12

a) Jeremy believes that his survey accurately represents his entire 9th grade class. Based on the results of his survey, predict how many of the 310 students in the 9th grade class have a bedtime and a curfew.

b) Jeremy thinks that his survey can be used for the entire High School population. What would his prediction be for students that do not have a curfew or bedtime, if the school population is 1246?

c) Do you think Jeremy's survey is a good indicator of the sleeping habits and curfew times of the entire school? Why or why not?