Name _____   Date _____

LESSON 10.3

Study Guide
For use with the lesson "Analyze Data"

GOAL   Find relative frequencies in a two-way frequency table.

Vocabulary

The body of a two-way frequency table gives the **joint frequencies.**

The row and column totals give the **marginal frequencies**.

EXAMPLE 1   ## Read information from a two-way frequency table

Exercise The table shows the number of workers at a company who exercise various numbers of days per week.

	0–1 day	2–3 days	4 or more days	Total
Men	85	155	460	700
Women	75	200	415	690
Total	160	355	875	1390

   a. How many men exercise 2 or 3 days per week?

   b. How many workers exercise 4 or more days per week?

   c. How many women exercise 2 or more days per week?

Solution

   a. The cell in the row for *Men* and in the column for *2-3 days* contains 155, so 155 men exercise 2 or 3 days per week.

   b. The cell in the total row and in the column for *4 or more days* contains 875, so 875 workers exercise 4 or more days per week.

   c. Add the numbers of women who exercise *2-3 days* and *4 or more days:* $200 + 415 = 615$. So, 615 women exercise 2 or more days per week.

Exercises for Example 1

Answer the questions based on the table showing the favorite type of vacation for some students.

	Skiing	Beach	Hiking	Total
Boys	29	26	19	74
Girls	17	38	22	77
Total	46	64	41	151

   1. How many girls prefer to go skiing?

   2. How many students prefer to go to the beach?

   3. How many boys were surveyed?

   4. How many girls did not choose hiking?

Study Guide *continued*

For use with the lesson "Analyze Data"

EXAMPLE 2 ## Make a two-way frequency table

Chores A total of 82 children were asked whether they prefer to wash dishes, dust, or vacuum. Seven boys prefer to wash dishes and 19 prefer to dust. Twenty-two children prefer to vacuum, while 21 prefer to wash dishes. There were an equal number of boys and girls in this survey.

Solution

The categories are wash dishes, dust, vacuum, boys, and girls. Fill in the information given and calculate the missing values.

Half of 82 is 41, so there are 41 boys and 41 girls. The number of boys who prefer to vacuum is $41 - (7 + 19) = 15$. The number of girls who prefer to wash dishes is $21 - 7 = 14$. The number of girls who prefer to vacuum is $22 - 15 = 7$. The number of girls who prefer to dust is $41 - (14 + 7) = 20$. Finally, the number of students who prefer to dust is $19 + 20 = 39$.

	Dishes	Dust	Vacuum	Total
Boys	7	19	15	41
Girls	14	20	7	41
Total	21	39	22	82

Exercises for Example 2

5. One hundred and three fifth-graders and one hundred and four sixth-graders were asked whether they prefer a laser tag party, attending a baseball game, or a pizza party. Laser tag was chosen by 37 fifth-graders and 29 sixth-graders. A pizza party was preferred by 42 fifth-graders, and a baseball game was preferred by a total of 65 students. Make a two-way frequency table for the data.

6. The table shows the number of people who hire a lawn service given the size of their lot. Based on the fact that more people with lawns of one-half acre or more hire a lawn service, is it true that more people in this survey hire a lawn service?

	Lawn Service	No Lawn Service	Total
less than 0.5 acre	34	29	63
0.5 acre or more	58	16	74
Total	92	45	137

LESSON 10.3