Warm-Up!

Find the mean, median, mode, and range of the data. Round to the nearest hundredth, if necessary.

9, 15, 28, 10, 8

mean = $\frac{70}{5}$

14

8, 9, 10, 15, 28 median = 10

mode = nomode

range = 28 - 8 =

20

10.3 Analyze Data

Before You found measures of central tendency.

Now You will find frequencies in a two-way frequency table.

Why? So you can use data about dogs in a store in Exercise 3.

GOAL: Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations.

What are we doing today?

KEY CONCEPT *For Your Notebook*

Two-way frequency table

A two-way frequency table divides the data into categories across the top and down the side.

	Apples	Oranges	Total
Boys	15	18	33
Girls	21	16	37
Total	36	34	70

Example 1!

The table shows the results of students naming their favorite subject.

	Math	Science	English	Total
Miss Bailey's homeroom	8	6	5	19
Mr. Cole's homeroom	4	7	9	20
Total	12	13	14	39

a. How many students in Miss Bailey's homeroom prefer math? 8

b. How many students from both homerooms prefer science? 13

COPY AND COMPLETE Copy and complete the two-way table showing data about cars sold.

	2 door	4 door	Total
6 cylinder	586	724	1310
8 cylinder	315	840	1155
Total	901	1564	2465

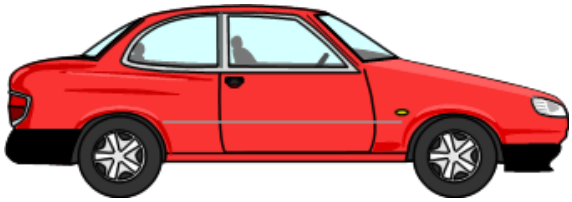
1564 - 840

586 + 724 = 1310

901 − 586 = 315

2465 − 1564 = 901

315 + 840 = 1155



Example 2!

Make a two way frequency table for the following data.

There are 175 freshmen taking a foreign language. Of these, 88 take Spanish, 46 take French, and the rest take German. No one takes more than one language. There are 42 boys taking Spanish, 31 girls taking French, and a total of 89 girls taking a language.

	Spanish	French	German	Total
Boys	42	15	29	86
Girls	46	31	12	89
Total	88	46	41	175

88 − 42 = 46

46 − 31 = 15

86 − 42 − 15 = 29

89 − 77 = 12

41 − 29

134

175 − 134

175 − 89

MUSIC There are 33 students in choir and 74 in band. No one is in both. Twenty-three of these students are less than 5 feet tall and 24 are more than 6 feet tall. Six choir members are less than 5 feet tall while twenty-two choir members are between 5 and 6 feet tall.

a. How many students in the choir are more than 6 feet tall? 5

b. How many students in the band are between 5 and 6 feet tall? 38

c. If you choose a student at random from the choir and from the band, which student is more likely to be between 5 and 6 feet tall? *Explain.*

C = $\frac{22}{60}$ = .3667 = 36.7%

B = $\frac{38}{60}$ = .6333 = 63.3%

	<5 feet	5 to 6 ft	>6 feet	Total
Choir	6	22	33-28 = 5	33
Band	23-6 = 17	60-22 = 38	24-5 = 19	74
Total	23	60	24	107

107 - 47 = 60

You try!

There are 152 students who play golf, basketball, or soccer. No one plays more than one of these sports. There are 22 who play golf, 50 who play basketball, and the rest play soccer. There are 10 boys who play golf, 26 girls who play basketball, and a total of 80 boys who play one of these sports. Make a two-way frequency table for the data.

	golf	bball	soccer	total
boys	10	24	46	80
girls	12	26	34	72
total	22	50	80	152

80 − 34 = 46

50 − 26 = 24

22 − 10 = 12

72 − 38 = 34

152 − 80 = 72

152 − 72 = 80