

Assignment

Write

How does a marginal relative frequency compare to a conditional relative frequency?

Remember

A conditional relative frequency distribution is the percent or ratio of occurrences of a category given the specific value of another category.

Practice

1. Angie is taking a broadcast communications class at her local college. The professor presents the students with the results of a survey that was conducted to determine where different age groups of people get their news. The table shows the results of the survey.

		News Source					Total
		Local TV	National TV	Radio	Newspaper	Internet	
Age Group	Under 35	95	72	74	53	110	404
	35–49	110	107	100	78	84	479
	50+	136	129	111	106	71	553
	Total	341	308	286	237	265	1436

- Angie claims that overall more people get their news from local TV than any other source. Is she correct? Explain your reasoning.
- Angie's classmate claims that the under 35 age group must use local TV less than the 35 to 49 age group because 95 is less than 110. Is she correct? Explain your reasoning.
- Construct a conditional relative frequency distribution of news source given the age group. Then, construct a conditional relative frequency distribution of age group given the news source.
- Which age group has the fewest number of people who receive their news from local TV? How does this compare to the claim made in part (b)?
- A company wants to make sure their ad reaches as many people under the age of 50 as possible. What news source would you suggest they use? Explain your reasoning.

Stretch

A study is done to see if there is a difference between the colors of cars that men and women prefer to drive. The colors in the study are black, white, gray, red, and blue. The researcher receives this incomplete information about the 100 total people that were surveyed. The ratio of the number of males who prefer red to the number of males is $\frac{15}{57}$. The ratio of the number of men who prefer white cars to the number of white cars is $\frac{3}{20}$. The ratio of the number of women who prefer black to the number of women is $\frac{6}{43}$. The ratio of the number of women who prefer blue cars to the number of people who prefer blue cars is $\frac{8}{10}$. A total of 37 males and females prefer black cars. A total of 17 males and females prefer red cars. Use the information to construct a two-way frequency table.

Review

1. The five number summaries for the heights in inches of male soccer and basketball players for a school district are provided.

Soccer Players	Basketball Players
Min = 61	Min = 65
Q1 = 63	Q1 = 69
Med = 66	Med = 71
Q3 = 68	Q3 = 73
Max = 71	Max = 78

a. Construct box-and-whisker plots of each type of player's heights using a single number line.

b. Describe each distribution and explain what they mean in terms of the problem situation.

c. Determine if there are outliers in either data set. Explain how you determined your answer.

2. A grocery store surveys customers by age group to determine what is most important to them when shopping. The table shows the customer responses.

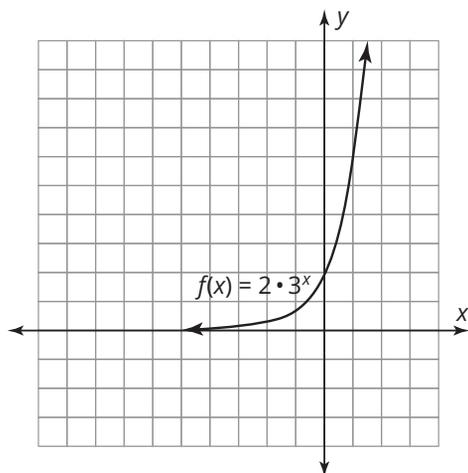
	Self-Checkout Option	Good Customer Service	Good Selection of Produce	Butcher Available
20–29	52	8	20	14
30–39	44	11	23	16
40–49	34	15	26	17
50–59	25	31	32	2
60–69	5	35	27	25

a. Construct a marginal relative frequency distribution of the data.

b. The manager wants to concentrate on one area of the store to improve customer satisfaction. In which area should the manager concentrate? Explain your reasoning.

3. For each function $f(x)$, sketch a graph of the given transformation, $g(x)$, and describe the transformation from the graph of $f(x)$ to $g(x)$.

a. $g(x) = -f(x)$



b. $g(x) = f(-x)$

