Section 6.R.3 Reading Graphs

Go to Section 6.R.3 Learn mode in Hawkes to follow along!

Introduction to Graphs

Four Types of Graphs and Their Purposes

_____	To emphasize comparative amounts
_____	To help in understanding percents or parts of a whole (_____ _____ are also called pie charts.)
_____	To indicate tendencies or trends over a period of time
_____	To indicate data in classes (a range or interval of numbers)

Properties of Graphs

Every graph should:

1. _____
2. _____
3. _____

Bar Graphs

Example 1 Reading a Bar Graph

Examine the bar graph and answer the questions given. Note that the scale on the left (sales) and the categories at the bottom (months) are clearly labeled and the graph itself has a title.

a. What were the sales in February?

b. During what month were sales lowest?

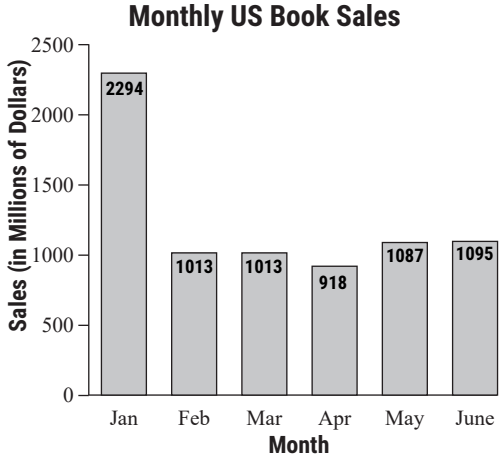
c. During what month were sales highest?

d. What were sales during the highest-sales month?

e. What were the sales in June?

f. What was the amount of increase in sales between April and May?

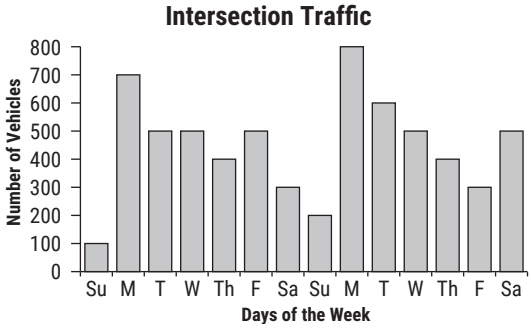
g. What was the percent increase in sales from April to May (to the nearest tenth of a percent)?



Solution

Exercises

1. The following bar graph shows the number of vehicles that crossed one intersection during a two-week period.



a. On which day did the highest number of vehicles cross the intersection? How many crossed that day?

b. What was the mean number of vehicles that crossed the intersection on the two Sundays?

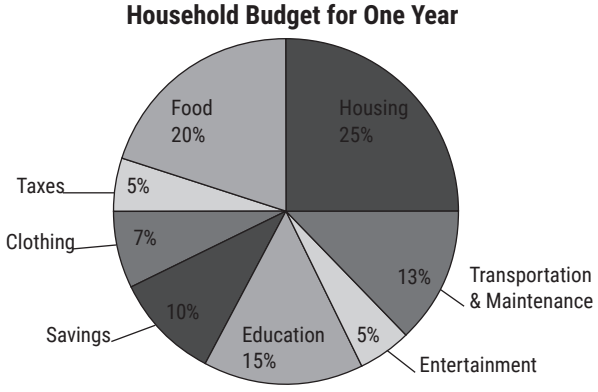
c. What was the total number of vehicles that crossed the intersection during the two weeks?

d. About what percent of the total traffic was counted on Saturdays? Round your answer to the nearest tenth of a percent.

Circle Graphs

Example 2 Reading a Circle Graph

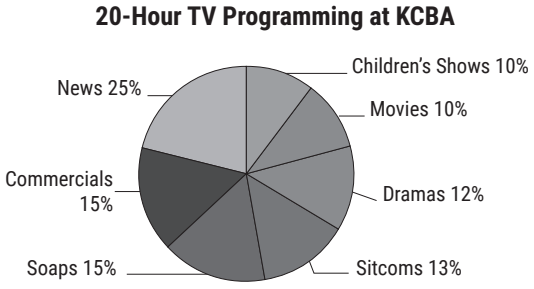
Examine the circle graph. This graph shows the percent of a household's annual income they plan to budget for various expenses. Suppose the household has an annual income of $45,000. Use the information in the graph to calculate how much money will be budgeted for each expense.



Solution

Exercises

2. The following circle graph represents the types of shows broadcast on television station KCBA. The station is off the air from 2 A.M. to 6 A.M., so they have only 20 hours of daily programming. Sports are not shown in the graph below because they are considered special events.



a. In the 20-hour period shown, how much time (in minutes) is devoted daily to each category?

b. What category has the most time devoted to it?

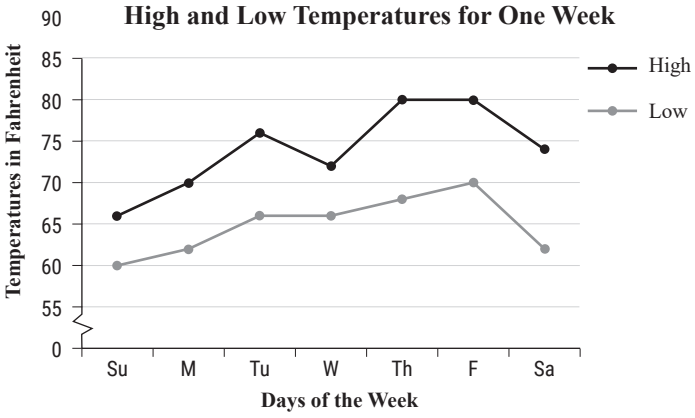
c. How much total time (in minutes) is devoted to drama, soaps, and sitcoms?

Line Graphs

Example 3 Reading a Line Graph

Examine the line graph. This graph shows the relationships between daily high and low temperatures. You can see that temperatures tended to rise during the week but fell sharply on Saturday.

(Note that the temperature scale on the left does not start at 0 °F. There is a break indicated in that scale).



a. What was the lowest high temperature?

b. On what day did this occur?

c. What was the highest low temperature?

d. On what day did this occur?

e. Find the mean difference between the daily high and low temperatures for the week shown (to the nearest hundredth).

Solution

Exercises

3. The following line graph shows the average monthly mortgage rates for June and December for 2012–2016.

a. During what month or months were mortgage rates highest?

b. During what month or months were mortgage rates lowest?

Histograms

Terms Related to Histograms

_____ A range (or interval) of numbers that contains data items.

_____ The smallest whole number that belongs to a class.

_____ The largest whole number that belongs to a class.

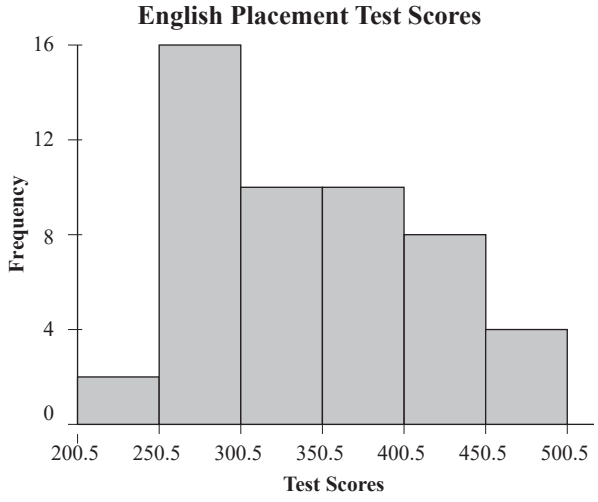
_____ Numbers that are halfway between the upper limit of one class and the lower limit of the next class.

_____ The difference between the class boundaries of a class (the width of each bar).

_____ The number of data items in a class.

Example 4 Reading a Histogram

Examine the following histogram. This histogram summarizes the scores of 50 students on an English placement test. Refer to the graph to answer the given questions.



a. How many classes are represented?

b. What are the class limits of the first class?

c. What are the class boundaries of the second class?

d. What is the width of each class?

e. Which class has the greatest frequency?

f. What is this frequency?

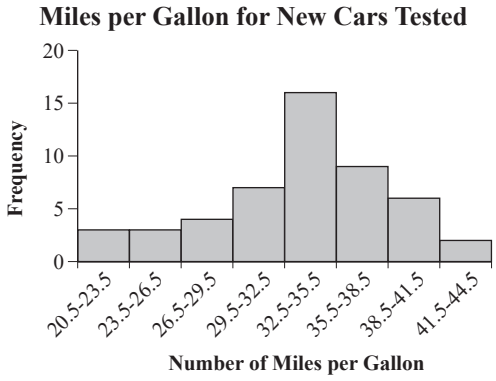
g. What percent of the scores are between 200.5 and 250.5?

h. What percent of the scores are above 400.5?

Solution

Exercises

4. A certain number of new cars were evaluated to find how many miles per gallon could be driven with a gallon of gas. The data is summarized in the following histogram.



a. How many classes are represented?

b. What is the class width?

c. Which class has the smallest frequency?

d. What is this frequency?

e. What are the class limits for the third class?

f. How many cars were tested?

g. How many cars tested below 30 miles per gallon?

h. What percent of the cars tested about 38 miles per gallon?