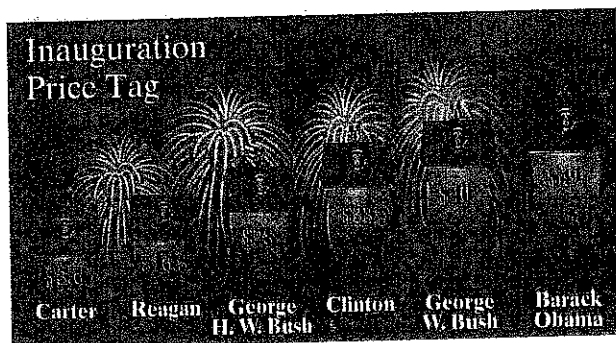


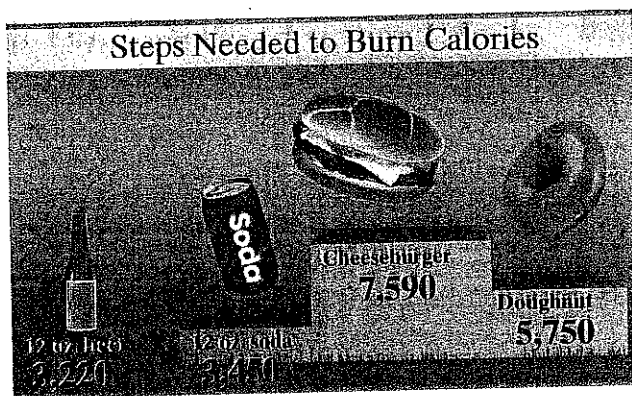
2.3 ASSESS YOUR UNDERSTANDING

APPLYING THE CONCEPTS

1. Inauguration Cost The following is a *USA Today* type graph. Explain how it is misleading.



2. Burning Calories The following is a *USA Today* type graph.

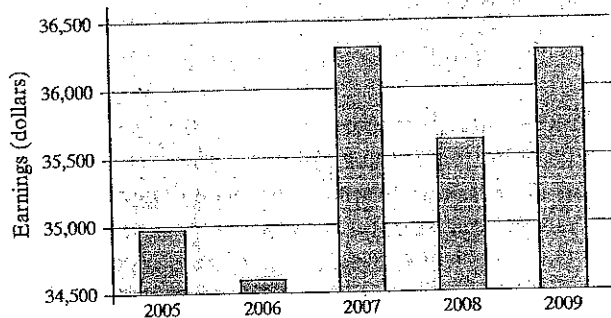


- (a) Explain how it is misleading.
- (b) What could be done to improve the graphic?

NW 3. Median Earnings The graph in the next column shows the median earnings for females from 2005 to 2009 in constant 2009 dollars.

- (a) How is the bar graph misleading? What does the graph seem to convey?
- (b) Redraw the graph so that it is not misleading. What does the new graph seem to convey?

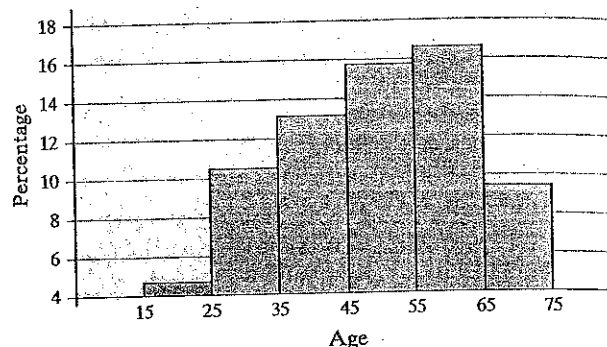
Median Earnings for Females in Constant 2009 Dollars



Source: U.S. Census Bureau

4. Union Membership The following relative frequency histogram represents the proportion of employed people aged 25 to 64 years old who are members of a union.

Union Membership

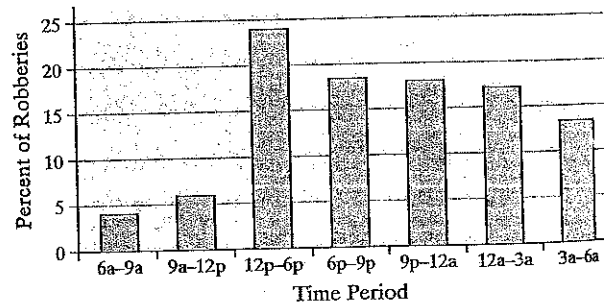


Source: U.S. Bureau of Labor Statistics

- (a) Describe how this graph is misleading. What might a reader conclude from the graph?
- (b) Redraw the histogram so that it is not misleading.

NW 5. Robberies A newspaper article claimed that the afternoon hours were the worst in terms of robberies and provided the graph in support of this claim. Explain how this graph is misleading.

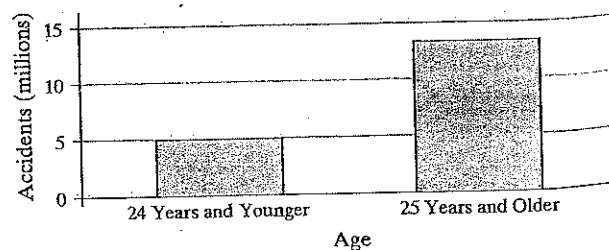
Hourly Crime Distribution (Robbery)



Source: U.S. Statistical Abstract

6. Car Accidents An article in a student newspaper claims that younger drivers are safer than older drivers and provides the following graph to support the claim. Explain how this graph is misleading.

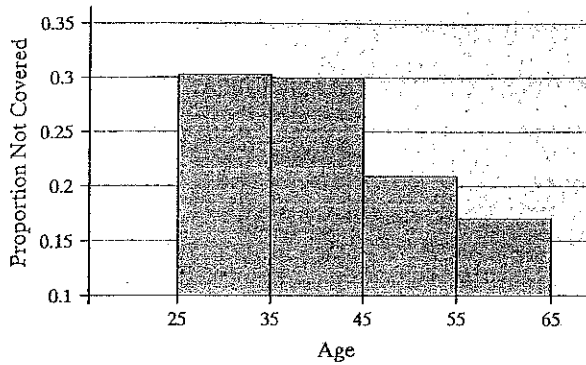
Number of Motor Vehicle Accidents, 2007



Source: U.S. Statistical Abstract

7. Health Insurance The following relative frequency histogram represents the proportion of people aged 25 to 64 years old not covered by any health insurance in 2009.

Proportion Not Covered by Health Insurance



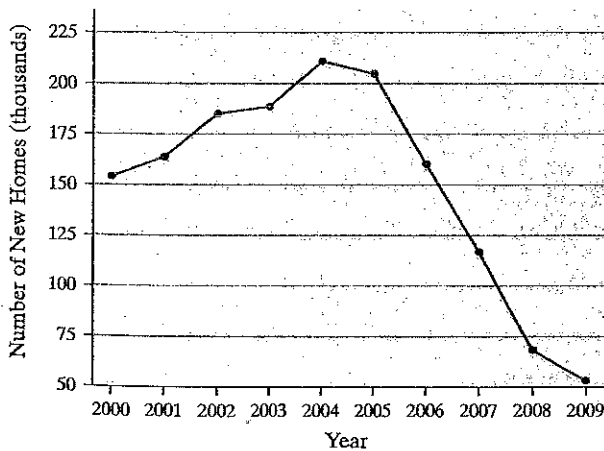
Source: U.S. Census Bureau

- (a) Describe how this graph is misleading. What might a reader conclude from the graph?
- (b) Redraw the histogram so that it is not misleading.

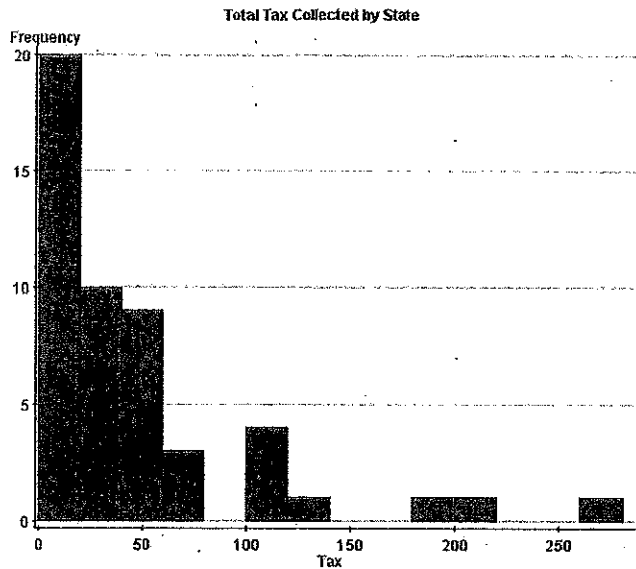
8. New Homes The time-series plot in the next column shows the number of new homes built in the Midwest from 2000 to 2009.

- (a) Describe how this graph is misleading.
- (b) What is the graph trying to convey?
- (c) In January 2006, the National Association of Realtors reported, "A lot of demand has been met over the last five years, and a modest rise in mortgage interest rates is causing some market cooling. Along with regulatory tightening on nontraditional mortgages, there will be fewer investors in the market this year." Does the graph support this view? Explain why or why not. Do you think the National Association of Realtors was correct in their assessment of the new home market?

New Homes Sold in Midwest



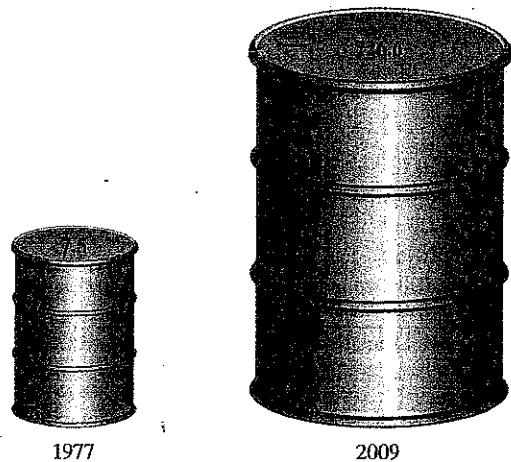
Source: U.S. Census Bureau



10. You Explain It! Oil Reserves The U.S. Strategic Oil Reserve is a government-owned stockpile of crude oil. It was established after the oil embargo in the mid-1970s and is meant to serve as a national defense fuel reserve, as well as to offset reductions in commercial oil supplies that would threaten the U.S. economy.

- (a) How many times larger should the graphic for 2009 be than the 1977 graphic (to the nearest whole number)?
- (b) The United States imported approximately 10 million barrels of oil per day in 2009. At that rate, assuming no change in U.S. oil production, how long would the U.S. strategic oil reserve last if no oil were imported?

U.S. Strategic Oil Reserves (millions of barrels)



Source: U.S. Energy Information Administration

9. Tax Revenue The following histogram drawn in StatCrunch represents the total tax collected by the Internal Revenue Service for each state plus Washington, D.C. Explain why the graph is misleading.

Note: Vermont paid the least in tax (\$3.3 million), while California paid the most (\$264.9 million).

11. Cost of Kids The *USA Today* type graph on the following page is based on data from the Department of Agriculture. It represents the percentage of income a middle-income family will spend on their children.

Student	Pulse
Perpectual Bempah	76
Megan Brooks	60
Jeff Honeycutt	60
Clarice Jefferson	81
Crystal Kurtenbach	72
Janette Lantka	80
Kevin McCarthy	80
Tammy Ohm	68
Kathy Wojdyla	73

- (a) Determine the population mean pulse.
- (b) Find three simple random samples of size 3 and determine the sample mean pulse of each sample.
- (c) Which samples result in a sample mean that overestimates the population mean? Which samples result in a sample mean that underestimates the population mean? Do any samples lead to a sample mean that equals the population mean?

22. Travel Time The following data represent the travel time (in minutes) to school for nine students enrolled in Sullivan's College Algebra course. Treat the nine students as a population.

Student	Travel Time	Student	Travel Time
Amanda	39	Scot	45
Amber	21	Erica	11
Tim	9	Tiffany	12
Mike	32	Glenn	39
Nicole	30		

- (a) Determine the population mean for travel time.
- (b) Find three simple random samples of size 4 and determine the sample mean for travel time of each sample.
- (c) Which samples result in a sample mean that overestimates the population mean? Which samples result in a sample mean that underestimates the population mean? Do any samples lead to a sample mean that equals the population mean?

23. Carbon Dioxide Emissions The given data represent the fossil-fuel carbon dioxide (CO₂) emissions (in thousands of metric tons) of the top 10 emitters in 2007.

Country	Emissions	Per Capita Emissions
China	1,783,029	1.35
United States	1,591,756	5.20
India	439,695	0.39
Russia	419,241	2.95
Japan	342,117	2.71
Germany	214,872	2.61
Canada	151,988	4.61
United Kingdom	147,155	2.41
South Korea	137,257	2.82
Iran	135,257	1.88

Source: Carbon Dioxide Information Analysis Center

- (a) Determine the mean CO₂ emissions of the top 10 countries.
- (b) Explain why the total emissions of a country is likely not best gauge of CO₂ emissions; instead, the emissions per capita (total emissions divided by population size) is the better gauge.
- (c) Determine the mean and median per capita CO₂ emissions of the top 10 countries. Which measure would environmentalist likely use to support the position that capita CO₂ emissions are too high? Why?

24. Tour de Lance Lance Armstrong won the Tour de France seven consecutive years (1999–2005). The following table gives winning times, distances, speeds, and margin of victory.

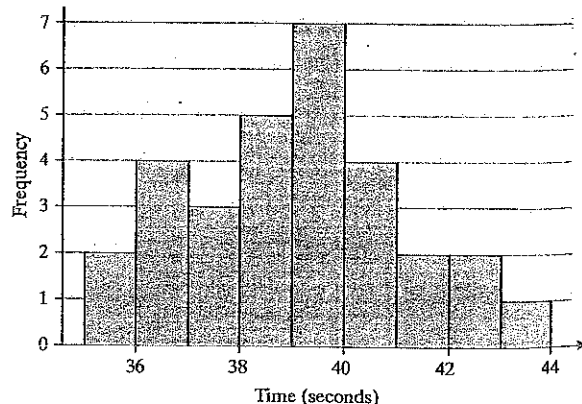
Year	Winning Time (h)	Distance (km)	Winning Speed (km/h)	Winning Margin (min)
1999	91.538	3687	40.28	7.617
2000	92.552	3662	39.56	6.033
2001	86.291	3453	40.02	6.733
2002	82.087	3278	39.93	7.283
2003	83.687	3427	40.94	1.017
2004	83.601	3391	40.56	6.317
2005	86.251	3593	41.65	4.667

Source: cyclingnews.com

- (a) Determine the mean and median of his winning times for the seven races.
- (b) Determine the mean and median of the distances for the seven races.
- (c) Determine the mean and median of his winning margin.
- (d) Determine the mean winning speed by finding the mean of the data values in the table. Next, compute the mean winning speed by finding the total of the seven distances and dividing by the total of the seven winning times. Finally, compute the mean winning speed by dividing the mean distance by the mean winning time. Do the three values agree or are there differences?

25. Connection Time A histogram of the connection time, in seconds, to an Internet service provider for 30 randomly selected connections is shown. The mean connection time is 39.007 seconds and the median connection time is 39.065 seconds. Identify the shape of the distribution. Which measure of central tendency best describes the "center" of the distribution?

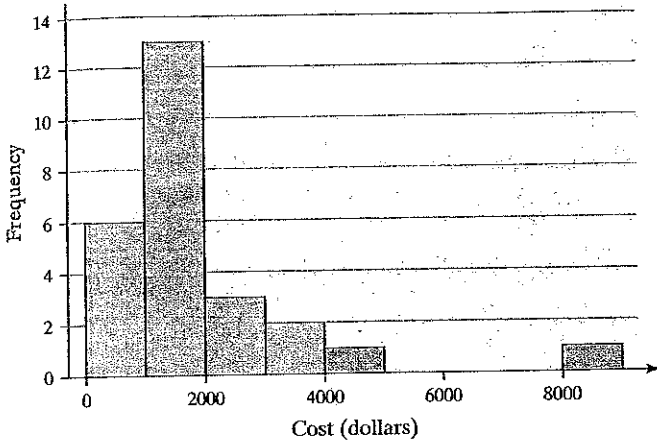
Connection Time



Source: Nicole Spreitzer, student at Joliet Junior College

26. **Journal Costs** A histogram of the annual subscription cost (in dollars) for 26 biology journals is shown. The mean subscription cost is \$1846 and the median subscription cost is \$1142. Identify the shape of the distribution. Which measure of central tendency better describes the “center” of the distribution?

Cost of Biology Journals



Source: Carol Wesolowski, student at Joliet Junior College

27. **M&Ms** The following data represent the weights (in grams) of a simple random sample of 50 M&M plain candies.

0.87	0.88	0.82	0.90	0.90	0.84	0.84
0.91	0.94	0.86	0.86	0.86	0.88	0.87
0.89	0.91	0.86	0.87	0.93	0.88	
0.83	0.95	0.87	0.93	0.91	0.85	
0.91	0.91	0.86	0.89	0.87	0.84	
0.88	0.88	0.89	0.79	0.82	0.83	
0.90	0.88	0.84	0.93	0.81	0.90	
0.88	0.92	0.85	0.84	0.84	0.86	

Source: Michael Sullivan

Determine the shape of the distribution of weights of M&Ms by drawing a frequency histogram. Find the mean and median. Which measure of central tendency better describes the weight of a plain M&M?

28. **Old Faithful** We have all heard of the Old Faithful geyser in Yellowstone National Park. However, there is another, less famous, Old Faithful geyser in Calistoga, California. The following data represent the length of eruption (in seconds) for a random sample of eruptions of the California Old Faithful.

108	108	99	105	103	103	94
102	99	106	90	104	110	110
103	109	109	111	101	101	
110	102	105	110	106	104	
104	100	103	102	120	90	
113	116	95	105	103	101	
100	101	107	110	92	108	

Source: Ladonna Hansen, Park Curator

Determine the shape of the distribution of length of eruption by drawing a frequency histogram. Find the mean and median. Which measure of central tendency better describes the length of eruption?

29. **Hours Working** A random sample of 25 college students was asked, “How many hours per week typically do you work outside the home?” Their responses were as follows:

0	0	15	20	30
40	30	20	35	35
28	15	20	25	25
30	5	0	30	24
28	30	35	15	15

Determine the shape of the distribution of hours worked by drawing a frequency histogram. Find the mean and median. Which measure of central tendency better describes hours worked?

30. **A Dealer’s Profit** The following data represent the profit (in dollars) of a new-car dealer for a random sample of 40 sales.

781	1038	453	1446	3082
501	451	1826	1348	3001
1342	1889	580	0	2909
2883	480	1664	1064	2978
149	1291	507	261	540
543	87	798	673	2862
1692	1783	2186	398	526
730	2324	2823	1676	4148

Source: Ashley Hudson, student at Joliet Junior College

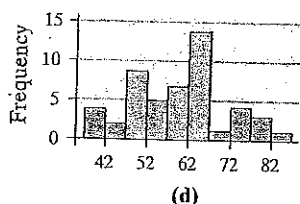
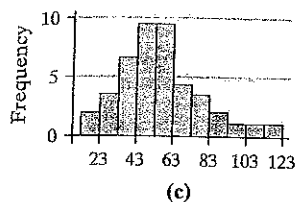
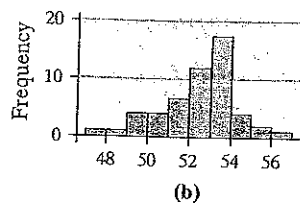
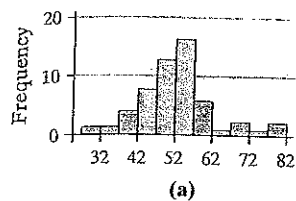
Determine the shape of the distribution of new-car profit by drawing a frequency histogram. Find the mean and median. Which measure of central tendency better describes the profit?

31. **Political Views** A sample of 30 registered voters was surveyed in which the respondents were asked, “Do you consider your political views to be conservative, moderate, or liberal?” The results of the survey are shown in the table.

Liberal	Conservative	Moderate
Moderate	Liberal	Moderate
Liberal	Moderate	Conservative
Moderate	Conservative	Moderate
Moderate	Moderate	Liberal
Liberal	Moderate	Liberal
Conservative	Moderate	Moderate
Liberal	Conservative	Liberal
Liberal	Conservative	Liberal
Conservative	Moderate	Conservative

Source: Based on data from the General Social Survey

- Determine the mode political view.
- Do you think it would be a good idea to rotate the choices conservative, moderate, or liberal in the question? Why?



APPLYING THE CONCEPTS

17. **pH in Water** The acidity or alkalinity of a solution is measured using pH. A pH less than 7 is acidic, while a pH greater than 7 is alkaline. The following data represent the pH in samples of bottled water and tap water.

Tap	7.64	7.45	7.47	7.50	7.68	7.69
	7.45	7.10	7.56	7.47	7.52	7.47
Bottled	5.15	5.09	5.26	5.20	5.02	5.23
	5.28	5.26	5.13	5.26	5.21	5.24

Source: Emily McCarney, student at Joliet Junior College.

- (a) Which type of water has more dispersion in pH using the range as the measure of dispersion?
 (b) Which type of water has more dispersion in pH using the standard deviation as the measure of dispersion?

18. **Reaction Time** In an experiment conducted online at the University of Mississippi, study participants are asked to react to a stimulus. In one experiment, the participant must press a key upon seeing a blue screen. The time (in seconds) to press the key is measured. The same person is then asked to press a key upon seeing a red screen, again with the time to react measured. The results for six study participants are listed in the table.

Participant Number	Reaction Time to Blue	Reaction Time to Red
1	0.582	0.408
2	0.481	0.407
3	0.841	0.542
4	0.267	0.402
5	0.685	0.456
6	0.450	0.533

Source: PsychExperiments at the University of Mississippi (www.olemiss.edu/psychexps)

- (a) Which color has more dispersion using the range as the measure of dispersion?
 (b) Which color has more dispersion using the standard deviation as the measure of dispersion?

19. **Pulse Rates** The following data represent the pulse rates (beats per minute) of nine students enrolled in a section of

Sullivan's course in Introductory Statistics. Treat the nine students as a population.

Student	Pulse
Perceptual Bempah	76
Megan Brooks	60
Jeff Honeycutt	60
Clarice Jefferson	81
Crystal Kurtenbach	72
Janette Lantka	80
Kevin McCarthy	80
Tammy Ohm	68
Kathy Wojdyla	73

- (a) Determine the population standard deviation.
 (b) Find three simple random samples of size 3, and determine the sample standard deviation of each sample.
 (c) Which samples underestimate the population standard deviation? Which overestimate the population standard deviation?

20. **Travel Time** The following data represent the travel time (in minutes) to school for nine students enrolled in Sullivan's College Algebra course. Treat the nine students as a population.

Student	Travel Time	Student	Travel Time
Amanda	39	Scot	45
Amber	21	Erica	11
Tim	9	Tiffany	12
Mike	32	Glenn	39
Nicole	30		

- (a) Determine the population standard deviation.
 (b) Find three simple random samples of size 4, and determine the sample standard deviation of each sample.
 (c) Which samples underestimate the population standard deviation? Which overestimate the population standard deviation?

21. **A Fish Story** Ethan and Drew went on a 10-day fishing trip. The number of smallmouth bass caught and released by the two boys each day was as follows:

Ethan	9	24	8	9	5	8	9	10	8	10
Drew	15	2	3	18	20	1	17	2	19	3

- (a) Find the population mean and the range for the number of smallmouth bass caught per day by each fisherman. Do these values indicate any differences between the two fishermen's catches per day? Explain.
 (b) Find the population standard deviation for the number of smallmouth bass caught per day by each fisherman. Do these values present a different story about the two fishermen's catches per day? Which fisherman has the more consistent record? Explain.
 (c) Discuss limitations of the range as a measure of dispersion.
22. **Soybean Yield** The data on the next page represent the number of pods on a sample of soybean plants for two different plot types. Which plot type do you think is superior? Why?

Plot Type	Pods								
Liberty	32	31	36	35	44	31	39	37	38
No Till	35	31	32	30	43	33	37	42	40

Source: Andrew Dieter and Brad Schmidgall, students at Joliet Junior College

23. **The Empirical Rule** The following data represent the weights (in grams) of a random sample of 50 M&M plain candies.

0.87	0.88	0.82	0.90	0.90	0.84	0.84
0.91	0.94	0.86	0.86	0.86	0.88	0.87
0.89	0.91	0.86	0.87	0.93	0.88	
0.83	0.95	0.87	0.93	0.91	0.85	
0.91	0.91	0.86	0.89	0.87	0.84	
0.88	0.88	0.89	0.79	0.82	0.83	
0.90	0.88	0.84	0.93	0.81	0.90	
0.88	0.92	0.85	0.84	0.84	0.86	

Source: Michael Sullivan

- Determine the sample standard deviation weight. Express your answer rounded to three decimal places.
- On the basis of the histogram drawn in Section 3.1, Problem 27, comment on the appropriateness of using the Empirical Rule to make any general statements about the weights of M&Ms.
- Use the Empirical Rule to determine the percentage of M&Ms with weights between 0.803 and 0.947 gram. *Hint:* $\bar{x} = 0.875$.
- Determine the actual percentage of M&Ms that weigh between 0.803 and 0.947 gram, inclusive.
- Use the Empirical Rule to determine the percentage of M&Ms with weights more than 0.911 gram.
- Determine the actual percentage of M&Ms that weigh more than 0.911 gram.

24. **The Empirical Rule** The following data represent the length of eruption for a random sample of eruptions at the Old Faithful geyser in Calistoga, California.

108	108	99	105	103	103	94
102	99	106	90	104	110	110
103	109	109	111	101	101	
110	102	105	110	106	104	
104	100	103	102	120	90	
113	116	95	105	103	101	
100	101	107	110	92	108	

Source: Ladonna Hansen, Park Curator

- Determine the sample standard deviation length of eruption. Express your answer rounded to the nearest whole number.
- On the basis of the histogram drawn in Section 3.1, Problem 28, comment on the appropriateness of using the Empirical Rule to make any general statements about the length of eruptions.
- Use the Empirical Rule to determine the percentage of eruptions that last between 92 and 116 seconds. *Hint:* $\bar{x} = 104$.

- Determine the actual percentage of eruptions that last between 92 and 116 seconds, inclusive.
- Use the Empirical Rule to determine the percentage of eruptions that last less than 98 seconds.
- Determine the actual percentage of eruptions that last less than 98 seconds.

25. **Which Car Would You Buy?** Suppose that you are in the market to purchase a car. With gas prices on the rise, you have narrowed it down to two choices and will let gas mileage be the deciding factor. You decide to conduct a little experiment in which you put 10 gallons of gas in the car and drive it on a closed track until it runs out gas. You conduct this experiment 15 times on each car and record the number of miles driven.

CAR 1					CAR 2				
228	223	178	220	220	277	164	326	215	259
233	233	271	219	223	217	321	263	160	257
217	214	189	236	248	239	230	183	217	230

Describe each data set. That is, determine the shape, center, and spread. Which car would you buy and why?

26. **Which Investment Is Better?** You have received a year-end bonus of \$5000. You decide to invest the money in the stock market and have narrowed your investment options down to two mutual funds. The following data represent the historical quarterly rates of return of each mutual fund for the past 20 quarters (5 years).

MUTUAL FUND A				
1.3	-0.3	0.6	6.8	5.0
5.2	4.8	2.4	3.0	1.8
7.3	8.6	3.4	3.8	-1.3
6.4	1.9	-0.5	-2.3	3.1

MUTUAL FUND B				
-5.4	6.7	11.9	4.3	4.3
3.5	10.5	2.9	3.8	5.9
-6.7	1.4	8.9	0.3	-2.4
-4.7	-1.1	3.4	7.7	12.9

Describe each data set. That is, determine the shape, center, and spread. Which mutual fund would you invest in and why?

27. **Rates of Return of Stocks** Stocks may be categorized by industry. The data on the following page represent the 5-year rates of return (in percent) for a sample of consumer goods stocks and energy stocks ending November 10, 2010.

- Determine the mean and the median rate of return for each industry. Which sector has the higher mean rate of return? Which sector has the higher median rate of return?
- Determine the standard deviation for each industry. In finance, the standard deviation rate of return is called **risk**. Typically, an investor "pays" for a higher return by accepting more risk. Is the investor paying for higher returns in this instance? Do you think the higher returns are worth the cost?

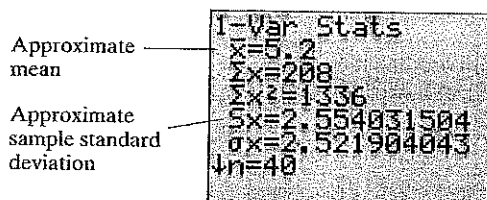
EXAMPLE 4 Approximating the Mean and Standard Deviation of Grouped Data Using Technology

Problem Approximate the mean and standard deviation of the 5-year rate of return data in Table 13 using a TI-83/84 Plus graphing calculator.

Approach The steps for approximating the mean and standard deviation of grouped data using the TI-83/84 Plus graphing calculator are given in the Technology Step-by-Step on page 153.

Solution Figure 16 shows the result from the TI-84 Plus. From the output, we can see that the approximate mean is 5.2% and the approximate standard deviation is 2.55%. The results agree with our by-hand solutions.

Figure 16



Now compute the approximate standard deviation from the frequency distribution in Problem 1.

3.3 ASSESS YOUR UNDERSTANDING**APPLYING THE CONCEPTS**

1. Birth Weight The following frequency distribution represents the birth weight of all babies born in the United States in 2004. Approximate the mean and standard deviation birth weight.

Weight (grams)	Number of Babies (thousands)
0–999	30
1000–1999	97
2000–2999	935
3000–3999	2698
4000–4999	344
5000–5999	5

Source: National Vital Statistics Report, Volume 55, No. 1

2. Square Footage of Housing The frequency distribution below represents the square footage of a random sample of 500 houses that are owner occupied year round. Approximate the mean and standard deviation square footage.

Square Footage	Frequency
0–499	5
500–999	17
1000–1499	36
1500–1999	121
2000–2499	119
2500–2999	81
3000–3499	47
3500–3999	45
4000–4499	22
4500–4999	7

Source: Based on data from the U.S. Census Bureau

3. Household Winter Temperature Often, frequency distributions are reported using unequal class widths because the frequencies of some groups would otherwise be small or very large. Consider the following data, which represent the daytime household temperature the thermostat is set to when someone is home for a random sample of 750 households. Determine the class midpoint, if necessary, for each class and approximate the mean and standard deviation temperature.

Temperature (°F)	Frequency
61–64	31
65–67	67
68–69	198
70	195
71–72	120
73–76	89
77–80	50

Source: Based on data from the U.S. Department of Energy

4. Living in Poverty (See Problem 3.) The frequency distribution on the following page represents the age of people living in poverty in 2009 (in thousands). In this frequency distribution, the class widths are not the same for each class. Approximate the mean and standard deviation age of a person living in poverty. For the open-ended class 65 and older, use 70 as the class midpoint.

Age	Frequency
0-17	15,451
18-24	6071
25-34	6123
35-44	4756
45-54	4421
55-59	1792
60-64	1520
65 and older	3433

Source: U.S. Census Bureau

5. Multiple Births The following data represent the number of live multiple-delivery births (three or more babies) in 2007 for women 15 to 54 years old.

Age	Number of Multiple Births
15-19	100
20-24	467
25-29	1620
30-34	2262
35-39	1545
40-44	328
45-49	85
50-54	20

Source: National Vital Statistics Reports, Vol. 58, No. 24, August 2010

- Approximate the mean and standard deviation for age.
- Draw a frequency histogram of the data to verify that the distribution is bell shaped.
- According to the Empirical Rule, 95% of mothers of multiple births will be between what two ages?

6. SAT Scores The following data represent SAT Mathematics scores for 2010.

SAT Math Score	Number
200-299	36,305
300-399	193,968
400-499	459,010
500-599	467,855
600-699	286,518
700-800	104,334

Source: The College Board

- Approximate the mean and standard deviation of the score.
- Draw a frequency histogram of the data to verify that the distribution is bell shaped.
- According to the Empirical Rule, 95% of these students will have SAT Mathematics scores between what two values?

7. Cigarette Tax Rates Use the frequency distribution whose class width is 0.5 obtained in Problem 37 in Section 2.2 to approximate the mean and standard deviation for cigarette tax rates. Compare these results to the actual mean and standard deviation.

8. Dividend Yield Use the frequency distribution whose class width is 0.4 obtained in Problem 38 in Section 2.2 to approximate the mean and standard deviation of the dividend yield. Compare these results to the actual mean and standard deviation.

9. Grade-Point Average Marissa has just completed her second semester in college. She earned a B in her 5-hour calculus course, an A in her 3-hour social work course, an A in her 4-hour biology course, and a C in her 3-hour American literature course. Assuming that an A equals 4 points, a B equals 3 points, and a C equals 2 points, determine Marissa's grade-point average for the semester.

10. Computing Class Average In Marissa's calculus course, attendance counts for 5% of the grade, quizzes count for 10% of the grade, exams count for 60% of the grade, and the final exam counts for 25% of the grade. Marissa had a 100% average for attendance, 93% for quizzes, 86% for exams, and 85% on the final. Determine Marissa's course average.

11. Mixed Chocolates Michael and Kevin want to buy chocolates. They can't agree on whether they want chocolate-covered almonds, chocolate-covered peanuts, or chocolate-covered raisins. They agree to create a mix. They bought 4 pounds of chocolate-covered almonds at \$3.50 per pound, 3 pounds of chocolate-covered peanuts for \$2.75 per pound, and 2 pounds of chocolate-covered raisins for \$2.25 per pound. Determine the cost per pound of the mix.

12. Nut Mix Michael and Kevin return to the candy store, but this time they want to purchase nuts. They can't decide among peanuts, cashews, or almonds. They again agree to create a mix. They bought 2.5 pounds of peanuts for \$1.30 per pound, 4 pounds of cashews for \$4.50 per pound, and 2 pounds of almonds for \$3.75 per pound. Determine the price per pound of the mix.

13. Population The following data represent the male and female population, by age, of the United States in 2008. **Note:** Use 95 for the class midpoint of ≥ 90 .

Age	Male Resident Pop (in thousands)	Female Resident Pop (in thousands)
0-9	929	19,992
10-19	21,074	20,278
20-29	21,105	20,482
30-39	19,780	20,042
40-49	21,754	22,346
50-59	19,303	20,302
60-69	12,388	13,709
70-79	6940	8837
80-89	3106	9154
≥ 90	479	1263

Source: U.S. Census Bureau

- Approximate the population mean and standard deviation of age for males.
- Approximate the population mean and standard deviation of age for females.
- Which gender has the higher mean age?
- Which gender has more dispersion in age?

14. Age of Mother The following data represent the age of the mother at childbirth for 1980 and 2007.