LESSON 7-1

Puzzles, Twisters & Teasers

The Plot Thickens!

Have you ever wondered about traveling trees? Finish this page to discover the answers to two important traveling tree questions! The list shows the number of minutes people spend watching television each day. Fill in the blanks to make a cumulative frequency table of the data.

10, 10, 15, 18, 25, 28, 32, 35, 35, 45, 50, 55, 57, 59

Minutes	Frequency	Cumulative Frequency	
10–20	4	4	A
21–30	2	6	E
31–40	3	9	L
41–50	2	11	S
51–60	3	14	V



What does a tree do when it wants to go away?

It L (9) E (6) A (4) V (14) E (6) S (11).

Now use the list to make a stem-and-leaf plot.

Stems	Leaves	
1	0 0 5 8	K
2	5 8	N
3	2 5 5	R
4	5	T
5	0 5 7 9	U

Where does a traveling tree pack its things?

In its T (45) R (32) U (57) N (28) K (15).

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LESSON 7-2

Practice A

Mean, Median, Mode, and Range

Find the mean, median, mode, and range.

1. 5, 8, 5, 9, 3 — 6; 5; 5; 6
2. 58, 54, 60, 56, 52 — 56; 56; no mode; 8
3. 18, 17, 21, 18, 26 — 20; 18; 18; 9
4. 60, 20, 40, 10, 50, 30 — 35; 35; no mode; 50

The line plot below shows the number of kilometers Clara ran each day for 14 days. Use the line plot for Exercises 5 and 6.



5. Find the mean, median and mode for the set of data.

   7; 5.5; 5 and 6

6. Which measure of central tendency best describes the data? Explain your answer.

   Possible answer: The median best describes the data set because it is closer to the number of kilometers that Clara ran the majority of the days than the mean is. There are two modes

Use the data set to answer the questions.

22, 18, 15, 19, 61, 21

7. What is the outlier? 61
8. How does the outlier affect the mean, median, and mode?

   It increases the mean by 7 and the median by 1. It does not affect the mode, because there is no mode.

9. Which measure of central tendency best describes the data set with the outlier?

   Possible answer: The median best describes the data set with the outlier.

10. Which measure of central tendency best describes the data set without the outlier?

    Possible answer: The mean best describes the data set without the outlier.

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LESSON 7-2

Practice B

Mean, Median, Mode, and Range

Find the mean, median, mode, and range of each data set.

1. 46, 35, 23, 37, 29, 53, 43 — 38; 37; no mode; 30
2. 72, 56, 47, 69, 75, 48, 56, 57 — 60; 56.5; 56; 28
3. 19, 11, 80, 19, 27, 19, 10, 25, 15 — 25, 19; 19; 70
4. 7, 8, 20, 6, 9, 11, 10, 8, 9, 8 — 9.6; 8.5; 8, 14

5. The line plot shows the number of hours 15 students said they spent on homework in one week. Which measure of central tendency best describes the data? Justify your answer.



   The median best describes data set because it is closest to the numbers of hours reported by most of the students.

Identify the outlier in each data set. Then determine how the outlier affects the mean, median, and mode of the data. Then tell which measure of central tendency best describes the data with and without the outlier.

6. 14, 16, 13, 15, 5, 16, 12

   Outlier, 5; It decreased the mean by $1.\overline{3}$ and the median by 0.5. It did not affect the mode. With the outlier, the data is best described by the median. Without the outlier, the data is best described by the mean.

7. 48, 46, 52, 92, 57, 58, 52, 61, 56

   Outlier, 92; It increased the mean by 4.25 and the median by 2. It did not affect the mode. With the outlier, the data is best described by the median. Without the outlier, the data is best described by the mean.

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LESSON 7-2

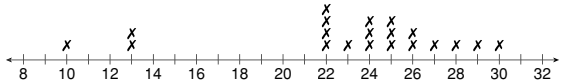
Practice C

Mean, Median, Mode, and Range

Find the mean, median, mode, and range of each data set.

1. 21, 14, 17, 16, 23, 17, 15, 13 — 17; 16.5; 17; 10
2. 44, 56, 38, 55, 62, 56, 48, 62, 56 — 53; 56; 56; 24

3. The line plot shows Omar's point totals for 20 basketball games. Which measure of central tendency best describes the data? Justify your answer.



   Possible answer: The median best describes data set because it is closest to the majority of the point totals.

Identify the outlier in each data set. Then determine how the outlier affects the mean, median, and mode of the data. Then tell which measure of central tendency best describes the data with and without the outlier.

4. 26, 33, 36, 26, 30, 26, 10, 33

   Outlier, 10; It decreased the mean by 2.5 and the median 2. It did not affect the mode. With the outlier, the data is best described by the median. Without the outlier, the data is best described by the mean.

5. 59, 56, 62, 103, 61, 67, 62, 52, 63

   Outlier, 103; It increased the mean by 4.75 and the median by 0.5. It did not affect the mode. With the outlier, the data is best described by the median. Without the outlier, the data is best described by the mean.

6. Bart has these quiz scores: 78, 76, 74, 80, 82, 78, 82, 75, 77, 82. Bart tells his parents that his typical quiz score is an 82. Which measure of central tendency did Bart use to describe his typical score? Do you think Bart's measure of central tendency best described his typical score? Explain.

   mode; Possible answer: No; the mode was higher than all of the other scores, and occurred only one more time than the score that occurred the next greatest number of times.

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