Name _____ Date _____ Class _____

LESSON 11-5

Technology Lab

Measures of Central Tendency and Dispersions

Use with Lesson 11-5

Activity

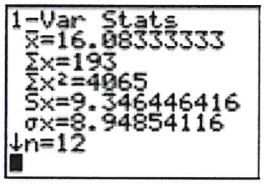
We Zapem Pest Control wants to predict how many opossums they will catch next year. The table shows the number of opossums they have caught so far this year. Use your graphing calculator to find the mean number of opossums caught and the standard deviation.

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Number of Opossums Caught	11	13	15	17	9	45	12	14	15	14	13	15

Step 1 Press STAT and then press 1.

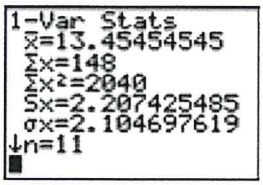
Step 2 Input the monthly numbers by entering **11** for January and then ENTER Then enter **13** for February and press ENTER. Keep entering the values from the table. When you entered the last number press STAT and then press the right arrow →.

Step 3 In the **CALC** menu press **1** then ENTER.



Because the standard deviation is so high, 8.95, identify and remove any outliers from the data set and repeat the above steps.

The outliner you need to remove is **45** June. Input the monthly numbers again but leave out June so that you only have 11 months.



Removing the outlier in the data set causes the mean to change from 16.08 to 13.45 and the standard deviation to change from 8.9 to 2.1. This model is a better indicator of the number of opossums the pest control company is likely to expect.

Name _____ Date _____ Class _____

LESSON 11-5

Practice C

Measures of Central Tendency and Variation

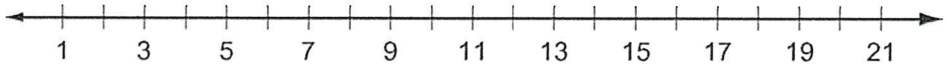
Write a data set to satisfy the given conditions.

1. Median = 8; mode = 4

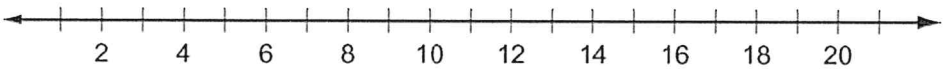
2. Mean = 10; median = 12

Make a box-and-whisker plot of the data. Find the interquartile range.

3. 21, 20, 4, 5, 5, 20, 20, 13, 1, 1, 13, 7, 13, 17, 7, 17, 9, 9



4. 10, 16, 3, 18, 18, 10, 8, 2, 9, 3, 7, 7, 8, 8, 18, 13, 7, 13



Find the variance and standard deviation.

5. { 13, 7, 16, 22, 26, 11, 12, 19, 9 }

6. { 4, 7, 28, 6, 1, 1, 10, 15, 48, 3, 4, 5 }

7. { 15, 5, 12, 8, 19, 11, 7, 10, 9, 13, 17, 5 }

8. { 37, 29, 33, 30, 23, 28, 20, 35, 19, 21 }

Solve.

9. The probability distribution for the number of children per family in a particular suburb of Chicago is shown below. Find the expected number of children per family in this region.

Number of Children, *n*	1	2	3	4
Probability	0.27	0.28	0.35	0.10

10. A chemist weighs samples obtained from a production run. The weights of the samples are 13 g, 14 g, 65 g, 11 g, 15 g, 14 g, 14 g, 12 g, 13 g, 15 g, 14 g, and 12 g.
    a. Find the mean of the data.
    b. Find the standard deviation.
    c. Identify any outliers.
    d. Describe how any outlier affects the mean and the standard deviation.

Assignment: pg 833 # 9-12, 20-23