Chapter 11 Review

Answer the questions about the following data set. (Round to 1 decimal place.):
84, 85, 84, 83, 90, 50, 91
1. Identify the outlier in the data set. Then find the mean, median, mode, range, and standard deviation of the data set when the outlier is included.
2. Find the mean, median, mode, range, and standard deviation of the data set when the outlier is not included.

Answer the questions about the following data set. (Round to 1 decimal place.):
20, 24, 21, 25, 23, 21
3. Find the mean, median, mode, range, and standard deviation.
4. Find the mean, median, mode, range, and standard deviation after 25 is added to each number.
5. Find the mean, median, mode, range, and standard deviation after 3 has been multiplied to each number.

A normal distribution has a mean of 50 and a standard deviation of 5. Find the probability that a randomly selected x-value from the distribution is in the given interval.
6. Between 40 and 55
7. At most 42
8. At least 60
9. Greater than 57

Word problems
10. A study found that the number of students per classroom is normally distributed with a mean of 18 students and a standard deviation of 3 students. What is the probability that a randomly selected classroom will have less than 20 students?
11. In a survey of 312 people at the local shopping center, 73% favored eating food. Find the margin of error for the survey, and give an interval that is likely to contain the exact percent of all people who favor eating food.

Identify the type of sample described. Then tell if the sample is more likely to be biased or unbiased.
12. A student is surveying people in her town to find out how involved they are in their local charities. The student asks only his or her own family members.
13. A faculty committee wants to know what the students think about taking extra math classes. They have a computer to generate a list of 20 students to survey.

Find the margin of error for a survey with the given sample size. Round your answers to the nearest tenth of a percent.
14. 5000
15. 100

Find the sample size required to achieve the given margin of error. Round your answers to the nearest whole number.
16. ±2%
17. ±20%

Graph the data points and classify the best-fitting model for the data.
18.

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1. Outlier: 50; Mean: 81; Median: 84; Mode: 84; Range: 41; Standard Deviation: 13.0
2. Mean: 86.2; Median: 84.5; Mode: 84; Range: 8; Standard Deviation: 3.1
3. Mean: 22.3; Median: 22; Mode: 21; Range: 5; Standard Deviation: 1.8
4. Mean: 47.3; Median: 47; Mode: 46; Range: 5; Standard Deviation: 1.8
5. Mean: 67; Median: 66; Mode: 63; Range: 15; Standard Deviation: 5.4
6. 0.815 (Calc 0.819)
7. 0.0548
8. 0.025 (Calc 0.023)
9. 0.0808
10. 0.7580 (Calc 0.7475)
11. Error = ±5.7%, 67.3% to 78.7%
12. Convenience; biased
13. Random; unbiased
14. ±1.4%
15. ±10%
16. 2500
17. 25
18. Power;

19. Linear;

20. Exponential;