Name _____ Class _____ Date _____

2-1

Standardized Test Prep

Analyzing Data

Multiple Choice

For Exercises 1–5, choose the correct letter. Use the data set below.

Day	9/1	9/2	9/3	9/4	9/5	9/6	9/7	9/8	9/9	9/10	9/11	9/12
Deliveries	14	15	19	15	15	16	19	20	21	29	16	17

1. What is the mean of the data set?

(A) 12 (B) 15 (C) 16.5 (D) 18

2. How many modes does the data set have?

(F) 0 (G) 1 (H) 2 (I) 3

3. What is the interquartile range of the data?

(A) 1.5 (B) 3 (C) 4.5 (D) 15

4. What is the median value of the data set *without the outlier?*

(F) 16 (G) 17 (H) 19 (I) 29

5. What value is at the 50th percentile?

(A) 16 (B) 17 (C) 19 (D) 20

Short Response

6. Make a box-and-whisker plot of the data set. Label the median, minimum, maximum, first quartile, and third quartile.

AFM Unit 2 Statistics Name:_____

Bellringer 2-2 Dot Plots Date: _____Block:_____

1. Thirty female users and twenty-five male users were selected at random from a database of people who play a video game regularly. Each of them agreed to be part of a research study and report their scores. A leadership score is based on a player's answers to leadership questions. A score of 1 to 40 is considered a beginning level leadership score, a score of 41 to 60 is considered a middle level leadership score, and a score of greater than 60 is considered an advanced level leadership score.

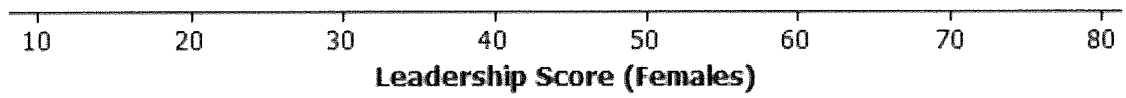
a. Use the following data to make a dot plot of the female scores, a dot plot of the male scores, and a dot plot of the scores for the combined group of males and females.

Female scores:

10	20	20	20	30	30	30	40	40	40
50	50	55	65	65	65	65	65	70	70
70	70	76	76	76	76	76	76	76	76

Male scores:

15	20	20	25	25	25	25	30	30	30
30	30	30	35	35	35	35	35	40	40
40	45	45	45	50					



b. What do you think is a typical score for a female user? What do you think is a typical score for a male user? Explain how you determined these typical scores.

c. Why is it more difficult to report a typical score for the overall group that includes both the males and females?

Name _____ Class _____ Date _____

2-3

Standardized Test Prep

Standard Deviation

Multiple Choice

For Exercises 1–4, choose the correct letter.

1. Of the 25 students who take a standardized test, the minimum score is 98 and the maximum score is 472. The mean score is 216, and the standard deviation is 52. What is the number of standard deviations that includes all the data values?

(A) 3 (B) 5 (C) 8 (D) 9

2. What is the standard deviation of the data set below?
87 21 90 43 54 23 123 110 90 44 50

(F) 33.1 (G) 47.0 (H) 66.8 (I) 89.0

3. A data set has a mean of 255 and a standard deviation of 12. All the data values are within two standard deviations of the mean. Which could be the maximum value of the data?

(A) 232 (B) 244 (C) 268 (D) 280

4. The scores on a math test are:
67 69 71 75 78 78 83 85 85 85 85 86 87 89 92 95 98 98 98 100.
Within how many standard deviations of the mean is a score of 100?

(F) 2 (G) 3 (H) 10 (I) 15

Short Response

5. The ages of students in a club are:
13 17 18 15 16 14 15 18 17 16 15 16 13.
Calculate the mean and standard deviation. What is the number of standard deviations that includes all the data values? Show your work.

NAME _____ DATE _____ PERIOD _____

2-4.0

Skills Practice

The Normal Distribution

Determine whether the data in each table appear to be *positively skewed, negatively skewed, or normally distributed.*

1.

Miles Run	Track Team Members
0–4	3
5–9	4
10–14	7
15–19	5
20–23	2

2.

Speeches Given	Political Candidates
0–5	1
6–11	2
12–17	3
18–23	8
24–29	8

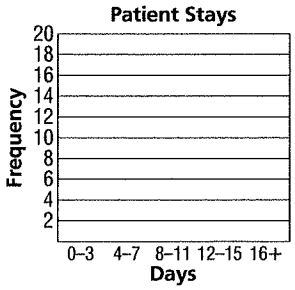
Lesson 12-7

For Exercises 3 and 4, use the frequency table that shows the average number of days patients spent on the surgical ward of a hospital last year.

Days	Number of Patients
0–3	5
4–7	18
8–11	11
12–15	9
16+	6

3. Make a histogram of the data.

4. Do the data appear to be *positively skewed*, *negatively skewed*, or *normally distributed*? Explain.



DELIVERY For Exercises 5–7, use the following information.

The time it takes a bicycle courier to deliver a parcel to his farthest customer is normally distributed with a mean of 40 minutes and a standard deviation of 4 minutes.

5. About what percent of the courier's trips to this customer take between 36 and 44 minutes?

6. About what percent of the courier's trips to this customer take between 40 and 48 minutes?

7. About what percent of the courier's trips to this customer take less than 32 minutes?

TESTING For Exercises 8–10, use the following information.

The average time it takes sophomores to complete a math test is normally distributed with a mean of 63.3 minutes and a standard deviation of 12.3 minutes.

8. About what percent of the sophomores take more than 75.6 minutes to complete the test?

9. About what percent of the sophomores take between 51 and 63.3 minutes?

10. About what percent of the sophomores take less than 63.3 minutes to complete the test?

2-5 Bellringer

Name_____

Date_____ Period_____

1. The mean speed of vehicles along a stretch of highway is 56 mph with a standard deviation of 4 mph. You measure the speed of three cars traveling along this stretch of highways as 62 mph, 47 mph, and 56 mph. Find the z-score that corresponds to each speed. Determine which car had a relatively faster speed.

2. The monthly utility bills in a city have a mean of $70 and a standard deviation of $8. Find the z-scores that correspond to utility bills of $60, $71 and $92. What can you conclude?

3. A certain brand of automobile tire has a mean life span of 35,000 miles and a standard deviation of 2250 miles. If the life spans of three randomly selected tires are 34,000 miles, 37,000 miles, and 31,000 miles. Find the z-scores that correspond with each of these mileages. Would the life spans of any of the tires be considered unusual?

4. A highly selective university will only admit students who place at least 2-zcores above the mean on the ACT that has a mean of 18 and a standard deviation of 6. What is the minimum score that an applicant must obtain to be admitted to the university?

5. The average for the statistics exam was 75 and the standard deviation was 8. Andrey was told by the instructor that he scored 1.5 standard deviations below the mean. What was Andrey's exam score and what can you conclude??

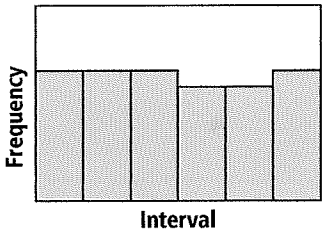
Name _____ Class _____ Date _____

2-6 Standardized Test Prep

Frequency and Histograms

Multiple Choice

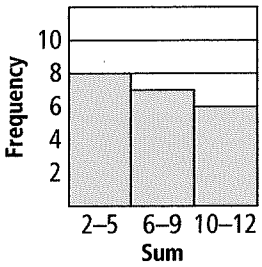
For Exercises 1–2, choose the correct letter.



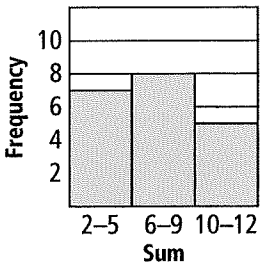
1. What is the shape of the histogram at the right?
   A. symmetric
   B. proportional
   C. skewed
   D. uniform

2. A student rolled two 6-sided number cubes several times. The numbers below are the sums of the numbers she rolled. Which histogram represents the data?
   7 11 2 6 7 9 12 3 7 4 8 3 5 10 7 8 11 5 4 12

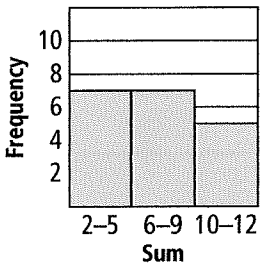
F.



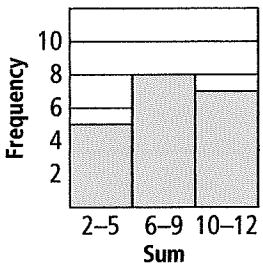
H.



G.



I.



Short Response

3. The number of emails a friend received each day over the last 20 days is shown below. Create a cumulative frequency table that represents the data. For how many days did she receive 19 or fewer emails?
   15 22 18 9 32 35 14 10 34 45 21 25 6 12 7 14 16 20 5 37

Name_____ Class _____ Date_____

2-7 ELL Support

Samples and Surveys

Choose the word from the list that best matches each sentence.

bias	**controlled experiment**	**observational study**
population	**Self-Selected sample**	

1. The members of a set. _____

2. A study method that involves observing members of a sample without affecting them. _____

3. Systematic error caused by the sampling method. _____

4. A sample that includes only volunteers. _____

5. A study method that involves a control group and a treated group. _____

Choose the word from the list that best completes each sentence.

convenience sample	**random sample**	**sample**
survey	**systematic sample**	

6. When conducting a _____, you ask members of a sample a set of questions.

7. All members of the population are equally likely to be chosen in a _____.

8. A _____ includes members of the population who are readily available.

9. A _____ is a part of the population.

10. To create a _____, you must order the population and then select from it at regular intervals.