

Name: _____

Date: _____

UNIT 6 • DESCRIBING DATA

Lesson 1: Summarizing, Representing, and Interpreting Data on a Single Measurement Variable

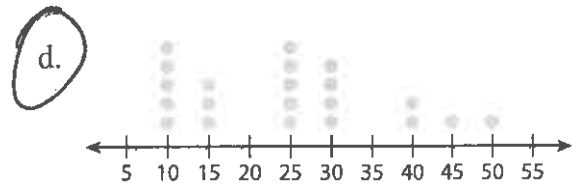
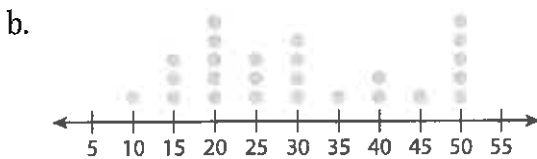
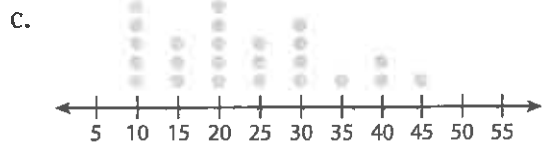
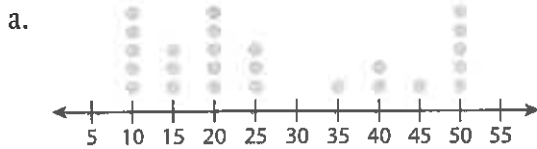
Assessment

Pre-Assessment

Circle the letter of the best answer.

1. Which dot plot represents the data set?

10, 10, 10, 10, 10, 15, 15, 15, 25, 25, 25, 25, 25, 30, 30, 30, 30, 40, 40, 45, 50



2. What is the median of the data set?

~~210, 340, 225, 330, 800, 288, 225~~

Handwritten notes: 2/10 2/5 2/5 (200) 3/4 3/4 800

- a. 210
- b. 330

- c. 288**
- d. 800

3. The speeds, in miles per hour, of six drivers are shown. What is the mean absolute deviation?

52, 61, 62, 68, 70, 73

- a. 5.5
- b. 6**

- c. 6.2
- d. 7

Handwritten note: 64.3

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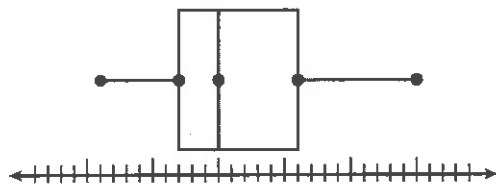
UNIT 6 • DESCRIBING DATA

Lesson 1: Summarizing, Representing, and Interpreting Data on a Single Measurement Variable

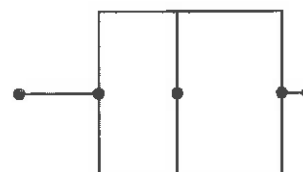
Assessment

4. Which box plot has an interquartile range of 6?

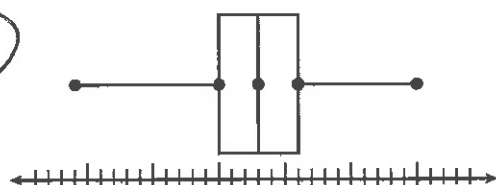
a.



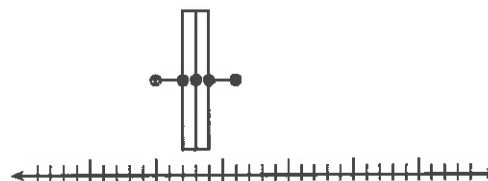
c.



b.



d.



5. Which data set could have an outlier?

a. 4, 5, 10, 13, 14, 22, 25, 28

c. 7, 11, 13, 15, 18, 21, 29, 30

b. 0, 0, 0, 1, 1, 1, 2, 2, 2, 4, 4

d. 4, 42, 46, 50, 55, 56, 62, 68

UNIT 6 • DESCRIBING DATA

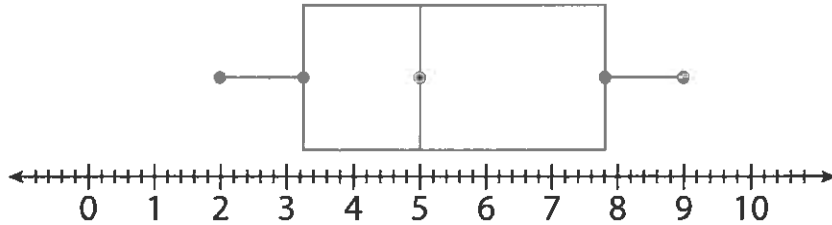
Lesson 1: Summarizing, Representing, and Interpreting Data on a Single Measurement Variable

Assessment

Progress Assessment

Circle the letter of the best answer.

1. What is the median of the data set used to create the box plot?



- a. 4.5 c. 6.6
b. 5 d. 2.1

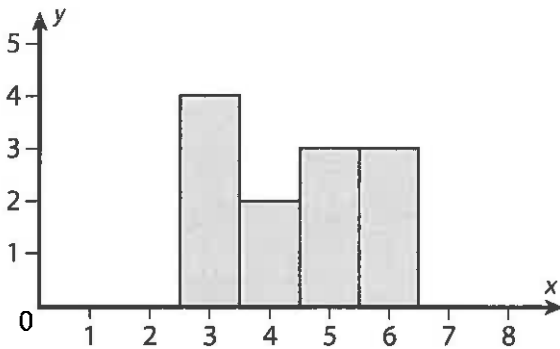
2. What is the interquartile range of the following data?

56 59 58 51 54 53 53 51 50 57 54 49 43 48 59

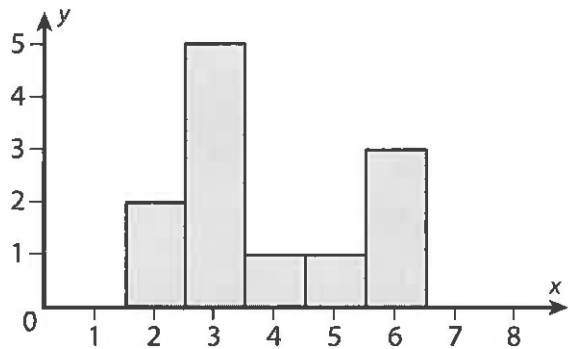
- a. 3.5 c. 16
 b. 43 **d. 7**

3. Which comparison is true of the following two data sets?

Data Set 1



Data Set 2



- a. data set 1: greater mean; data set 1: greater variation
b. data set 1: greater mean; data set 2: greater variation
 c. data set 2: greater mean; data set 1: greater variation
 d. data set 2: greater mean; data set 2: greater variation

continued

Name: _____

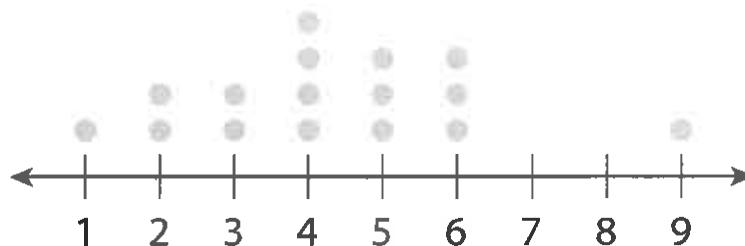
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Lesson 1: Summarizing, Representing, and Interpreting Data on a Single Measurement Variable

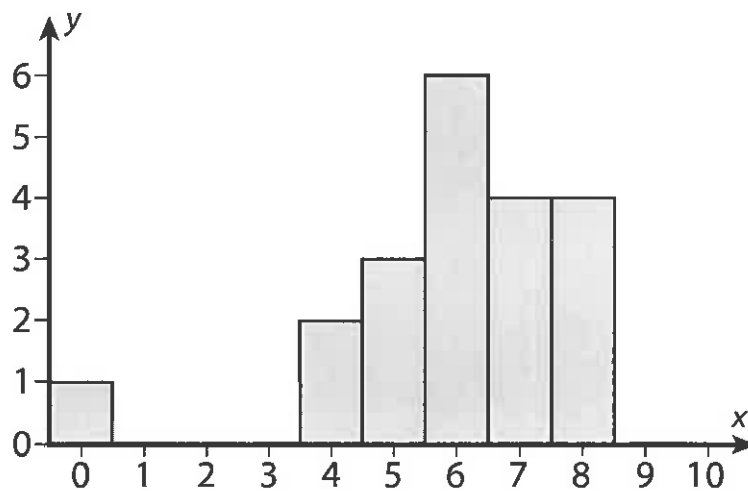
Assessment

4. Which data set does the dot plot represent?



- a. data set 1: {1, 2, 2, 3, 3, 4, 4, 4, 4, 5, 5, 5, 6, 6, 6, 9}
- b. data set 2: {1, 2, 3, 4, 5, 6, 9}
- c. data set 3: {1, 2, 3, 4, 5, 6, 7, 8, 9}
- d. data set 4: {1, 2, 2, 3, 3, 4, 4, 4, 5, 5, 5, 5, 6, 6, 6, 9}

5. Which value appears to be an outlier?



- a. 0
- b. 8
- c. 4
- d. 6

continued

UNIT 6 • DESCRIBING DATA

Lesson 1: Summarizing, Representing, and Interpreting Data on a Single Measurement Variable

Assessment

6. What is the mean absolute deviation of the data?

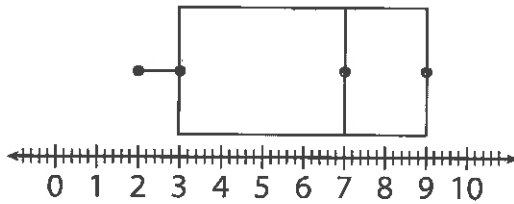
36 39 35 38 31 32 36 39 38 31 30 39
41 35 31 29 35 39 40 42

- a. 13
- b. 7.5
- c. 66.4
- d. 8.3**

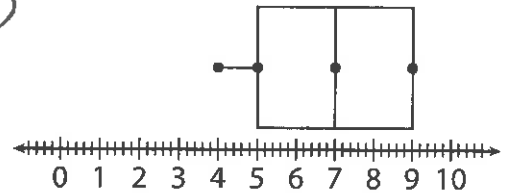
7. Which box plot represents the data?

4 4 5 5 5 5 6 7 7 9 9 9 9 9 9

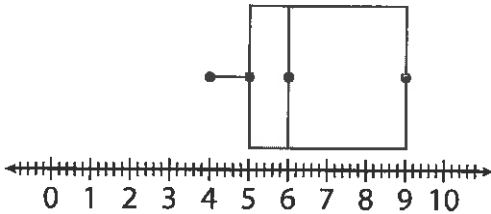
a.



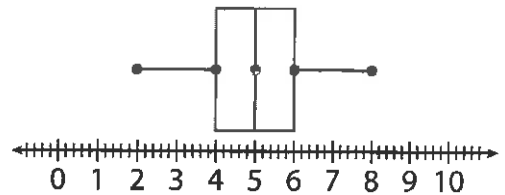
c.



b.



d.



8. Which comparison is true of the following two data sets?

Data Set 1											
62	69	53	64	68	51	53	59	64	68	72	63

Data Set 2											
75	72	73	76	64	69	68	59	68	73	70	61

- a. data set 1: greater mean; data set 1: greater absolute variation
- b. data set 1: greater mean; data set 2: greater absolute variation
- c. data set 2: greater mean; data set 1: greater absolute variation**
- d. data set 2: greater mean; data set 2: greater absolute variation

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Name: _____

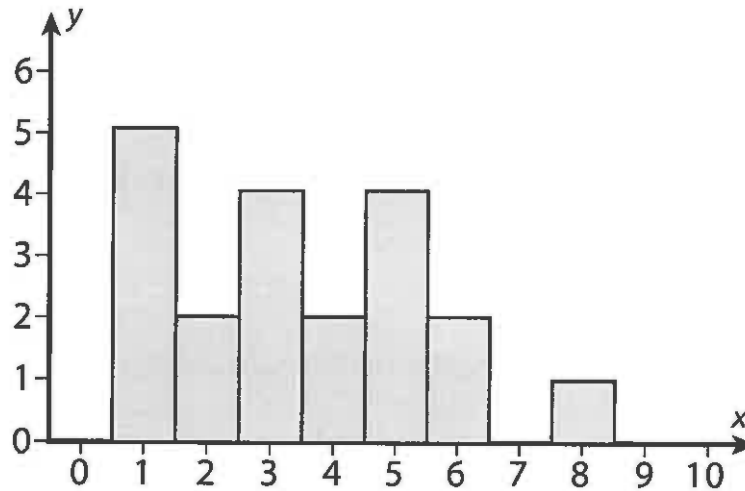
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UNIT 6 • DESCRIBING DATA

Lesson 1: Summarizing, Representing, and Interpreting Data on a Single Measurement Variable

Assessment

9. Which data set does the histogram represent?



- a. data set 1: {1, 2, 3, 4, 5, 6, 8}
- b. data set 2: {1, 1, 1, 1, 1, 2, 2, 3, 3, 3, 3, 4, 4, 5, 5, 5, 5, 6, 6, 8}
- c. data set 3: {1, 1, 1, 1, 1, 2, 2, 2, 3, 3, 3, 4, 4, 5, 5, 5, 6, 6, 6, 8}
- d. data set 4: {1, 1, 1, 1, 2, 2, 2, 3, 3, 3, 4, 4, 4, 5, 5, 5, 6, 6, 6, 8}

10. Which value in the data set is an outlier?

23 26 29 28 26 23 29 19 15 19 18
9 26 29 26 28 27 26 32 31

- a. 32
- b. 26
- c. 15
- d. 9

continued

Name: _____

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UNIT 6 • DESCRIBING DATA

Lesson 2: Working with Two Variables

Assessment

Pre-Assessment

Circle the letter of the best answer.

1. Ruby asks her classmates how many hours they sleep each night during the week, and separates the responses by gender in the following two-way frequency table. What is the joint frequency of males who sleep 8–10 hours?

Gender	Hours of sleep			
	4–6	6–8	8–10	10–12
Male	5	14	8	2
Female	11	10	5	1

- a. 5
b. 8
c. 10
d. 14

2. Anna asks her friends which book they prefer in a trilogy. She separates the responses by age. What is the marginal frequency of Book 1?

Age	Preferred book		
	Book 1	Book 2	Book 3
14 years old	8	5	19
15 years old	10	12	7
16 years old	16	0	11

- a. 17
b. 29
c. 34
d. 37

continued

Name: _____

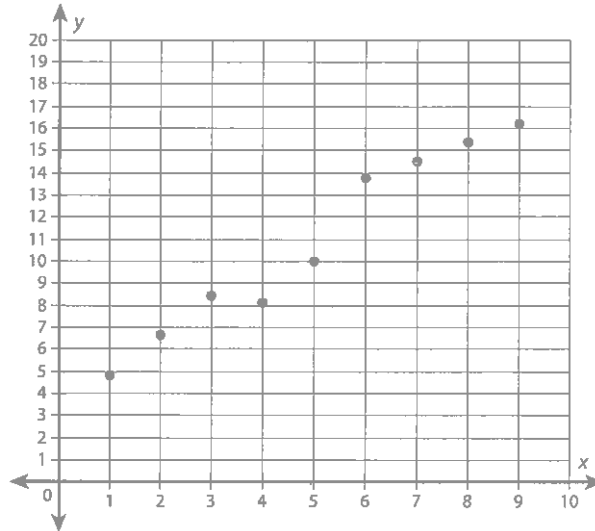
Date: _____

UNIT 6 • DESCRIBING DATA

Lesson 2: Working with Two Variables

Assessment

3. Which function could be used to approximate the data in the following scatter plot?



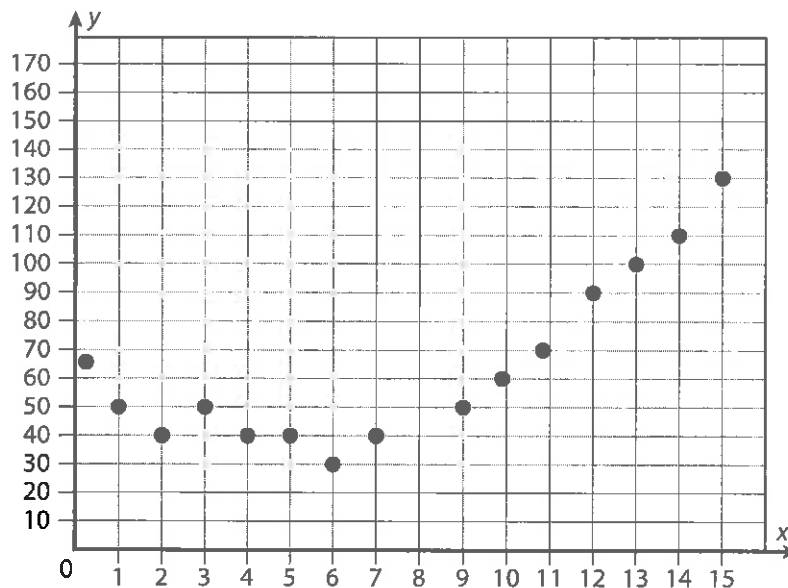
a. $y = -1.5x + 3.4$

c. $y = -1.5x - 3.4$

b. $y = 1.5x - 3.4$

d. $y = 1.5x + 3.4$

4. Which function best fits the data in the following scatter plot?



a. $y = 7x + 20$

b. $y = 1.35^x + 40$

c. $y = (x - 5)^2 + 36$

d. none of the above

continued

Name: _____

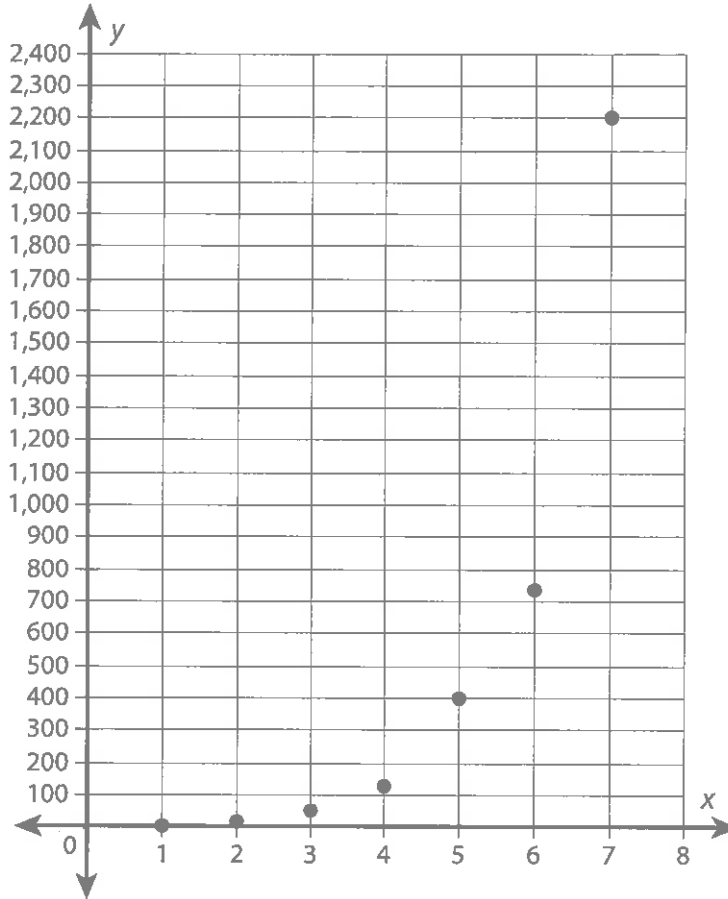
Date: _____

UNIT 6 • DESCRIBING DATA

Lesson 2: Working with Two Variables

Assessment

5. Which function could be used to estimate the data in the following scatter plot?



a. $y = 3x + 35$

b. $y = 3^x + 35$

c. $y = (-3)^x + 35$

d. $y = 3x - 35$

UNIT 6 • DESCRIBING DATA**Lesson 2: Working with Two Variables****Assessment****Progress Assessment**

Circle the letter of the best answer.

1. Vince asks baseball players how many years they have played baseball. He separates the responses by school grade and records them in the following table. What is the joint frequency of ninth graders who have played for 4 years?

Grade	Years playing baseball				
	4	5	6	7	8
8th grade	9	7	4	1	1
9th grade	6	8	5	3	2
10th grade	2	4	10	8	3
11th grade	1	0	7	14	5
12th grade	0	1	2	9	10

- a. 1
b. 2
c. 6
d. 9

2. Grace asks her friends which car they prefer. She separates the responses by gender and lists them in the following table. What is the marginal frequency of males?

Gender	Preferred car		
	Car 1	Car 2	Car 3
Male	14	13	10
Female	8	15	12

- a. 14
b. 22
c. 35
d. 37

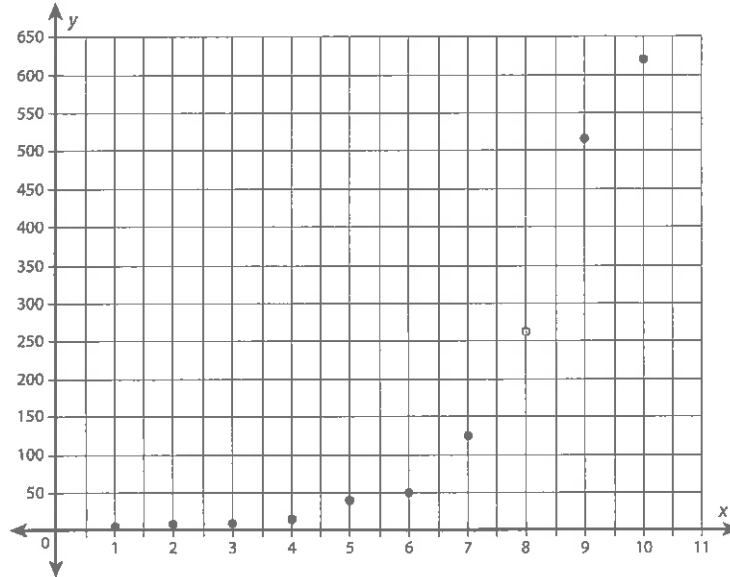
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UNIT 6 • DESCRIBING DATA

Lesson 2: Working with Two Variables

Assessment

3. Which equation could be used to approximate the data in the scatter plot?



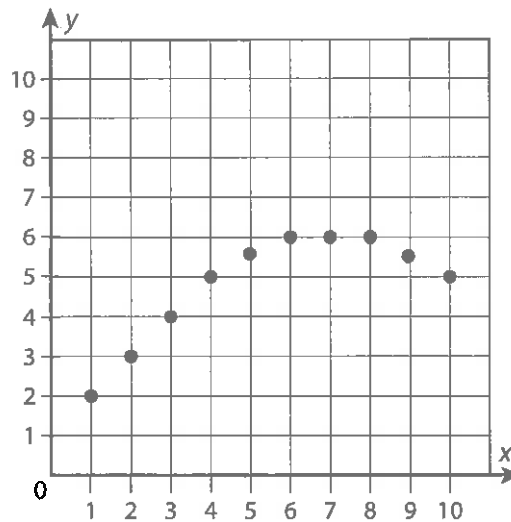
a. $y = 2^x$

c. $y = \frac{1}{2}x$

b. $y = 2x$

d. $y = \left(\frac{1}{2}\right)^x$

4. Which equation could be used to approximate the data in the scatter plot?



a. $y = -0.12(x - 7)^2 + 6$

c. $y = 0.6x + 1$

b. $y = -5(0.75)^x + 6$

d. none of the above

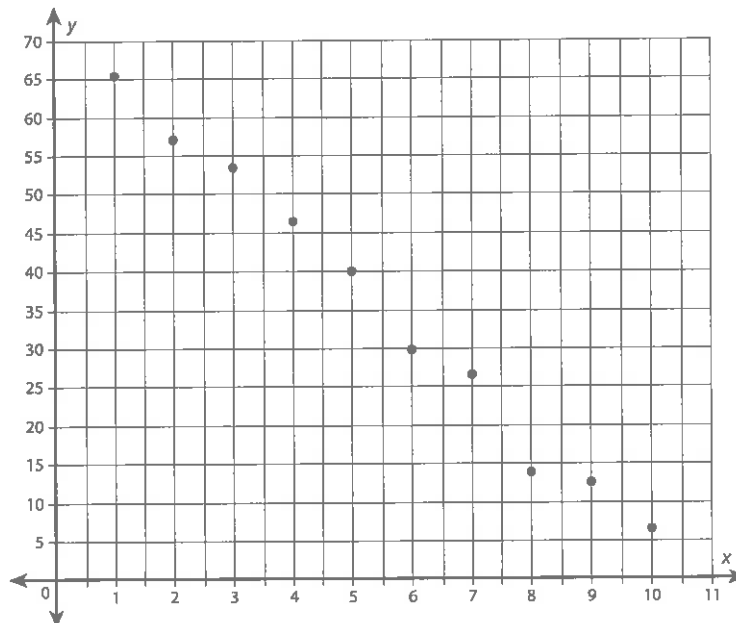
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UNIT 6 • DESCRIBING DATA

Lesson 2: Working with Two Variables

Assessment

5. Which equation could be used to approximate the data in the scatter plot?



a. $y = (-6.8)^x + 72$
 b. $y = -6.8x + 72$

c. $y = 6.8^x + 72$
 d. $y = 6.8x + 72$

6. Ms. Ward records the field trip preferences of students, separated by age, in the following table. What is the joint frequency of 14-year-olds who prefer the movie theater?

Age	Field trip preference		
	Water park	Movie theater	Sports game
14 years old	8	19	5
15 years old	3	5	20
16 years old	2	15	3

- a. 8
 b. 5

- c. 15
 d. 19

continued

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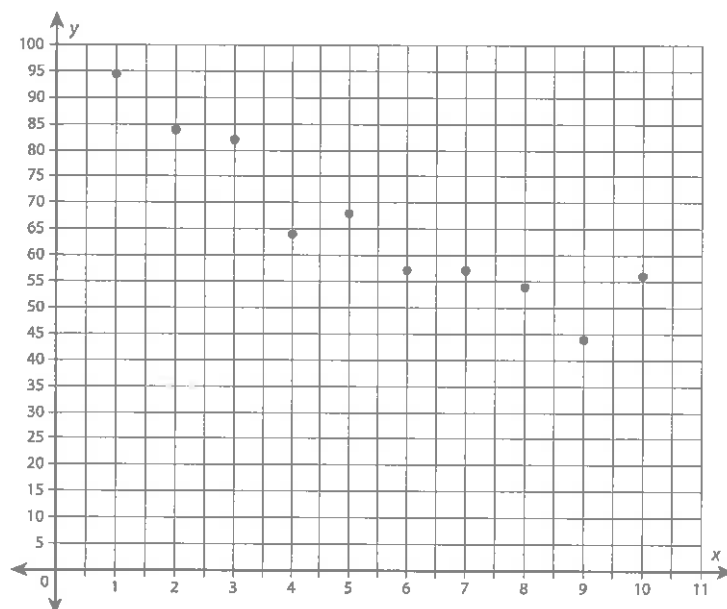
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UNIT 6 • DESCRIBING DATA**Lesson 2: Working with Two Variables****Assessment**

7. Dylan records whether people prefer to drink coffee, tea, water, or orange juice in the morning. He separates the responses by which of three eastern United States regions they live in: the Northeast, the Mid-Atlantic, or the South. What is the conditional frequency of people from the Northeast who prefer coffee, relative to the total number of respondents?

Region	Preferred morning drink			
	Coffee	Tea	Water	Orange juice
Northeast	28	24	10	2
Mid-Atlantic	20	31	7	9
South	15	29	6	12

- a. 0.10
b. 0.15
c. 0.33
d. 0.44
8. Which equation could be used to approximate the data in the scatter plot?



- a.** $y = (-5)^x + 93$
b. $y = 5x + 93$
c. $y = 5^x + 93$
d. $y = -5x + 93$

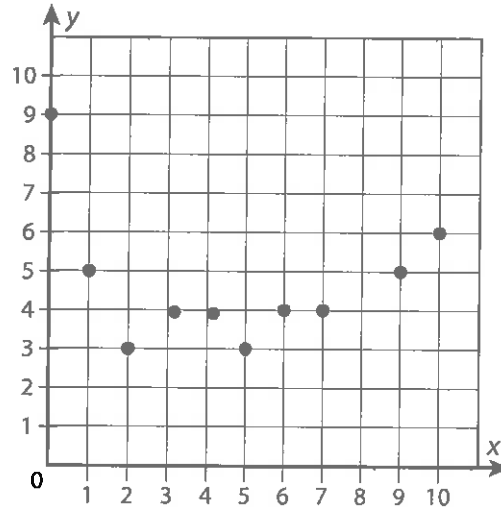
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UNIT 6 • DESCRIBING DATA

Lesson 2: Working with Two Variables

Assessment

9. Which equation could be used to approximate the data in the scatter plot?



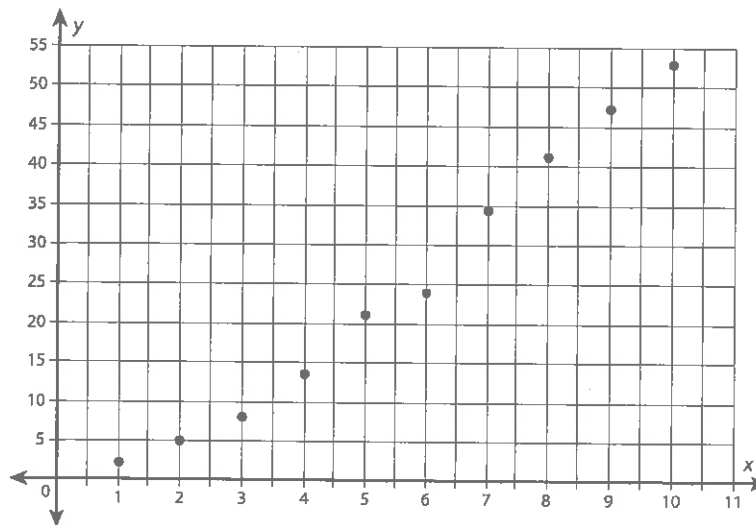
a. $y = 5 \cdot 0.5^x + 3$

c. $y = 0.2(x - 5)^2 + 2.5$

b. $y = -5 \cdot 0.5^x + 3$

d. $y = -0.2(x - 5)^2 + 2.5$

10. Which equation could be used to approximate the data in the scatter plot?



a. $y = (-6)^x - 9$

c. $y = 6x - 9$

b. $y = 6^x - 9$

d. $y = -6x - 9$

continued

Name: _____

Date: _____

UNIT 6 • DESCRIBING DATA

Lesson 3: Interpreting Linear Models

Assessment

Pre-Assessment

Circle the letter of the best answer.

1. Sam tracks the growth of a plant, and records its height in centimeters each week. He determines that the equation $y = 2.3x + 16$ can be used to estimate the plant's height for any week. Which statement is true based on Sam's equation?
 - a. The plant grows approximately 16 centimeters each week.
 - b. The starting height of the plant is approximately 16 centimeters.
 - c. The starting height of the plant is approximately 2.3 centimeters.
 - d. The plant did not grow during the time Sam tracked its height.

2. Isabella makes deposits to her savings account each month, and she also earns interest. She records the amount of money in her savings account each month, and finds that the equation $y = 218x + 100$ can be used to estimate the dollars in her savings account for any month. Which statement is true based on Isabella's equation?
 - a. She started her account with approximately \$218.
 - b. The amount of money in her account increases by approximately \$100 each month.
 - c. The amount of money in her account increases by approximately \$218 each month.
 - d. Isabella takes approximately \$218 out of her account each month.

continued

UNIT 6 • DESCRIBING DATA

Lesson 3: Interpreting Linear Models

Assessment

3. What is the correlation coefficient, r , of the data in the table? Use technology to calculate r .

x	y
3	35
1	14
6	67
2	27
2	15
2	13
8	35
7	76
4	52
4	51
6	57
2	18

- a. 0.598
b. 0.773
c. 7.321
d. 38.33
4. A data set has a correlation coefficient of -0.916 . Which statement about the data set is true?
- a. The data has a strong positive linear correlation.
b. The data has a weak positive linear correlation.
c. The data has a weak negative linear correlation.
d. The data has a strong negative linear correlation.
5. Event x and event y have a strong negative linear correlation. Which statement do you know is true about events x and y ?
- a. If x increases, y decreases.
b. If x increases, y increases.
c. If x increases, it is unknown how y will change.
d. Event x is responsible for the change in y .

UNIT 6 • DESCRIBING DATA**Lesson 3: Interpreting Linear Models****Assessment****Progress Assessment**

Circle the letter of the best answer.

- Coach Thomas records her athletes' performances at recent softball games. She uses the information to find an equation to represent the number of times a player should reach first base for any number of at bats. Her equation is $y = 0.27x + 0.04$, where x represents the number of times at bat, and y represents the number of times reaching first base. Which statement is true based on the equation?
 - For each at bat, there is a 27% chance that a player will get on first base.
 - For each at bat, there is a 4% chance that a player will get on first base.
 - For each at bat, there is a 2.7% chance that a player will get on first base.
 - For each at bat, there is a 0.4% chance that a player will get on first base.

- Ella planted tulips around her house. Each day, she tracks the number of blossoming buds. For the 10 days that she tracks the tulips, she finds that the equation $y = 2x + 3$ estimates the number of blossoming buds on any of the days from 1 to 10. Which statement is true based on this equation?
 - Approximately 3 buds blossom each day.
 - Approximately 2 buds blossom each day.
 - The day Ella started tracking blossoming buds, there were approximately 2 blossoming buds.
 - Approximately $\frac{2}{3}$ buds blossom each day.

continued

Name: _____

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UNIT 6 • DESCRIBING DATA

Lesson 3: Interpreting Linear Models

Assessment

3. What is the correlation coefficient, r , of the data in the table? Use technology to calculate r .

x	y
20	103
23	116
20	61
21	105
25	127
23	93
26	105
27	108
23	118
26	105
26	81
27	108

a. $r = 0.103$

b. $r = 0.253$

c. $r = 0.321$

d. $r = 2.156$

4. A data set has a correlation coefficient of 0.013. Which statement about the data is true?

- a. The data has little or no linear correlation.
- b. The data has a strong positive linear correlation.
- c. The data has a weak negative linear correlation.
- d. The data has a strong negative linear correlation.

continued

UNIT 6 • DESCRIBING DATA

Lesson 3: Interpreting Linear Models

Assessment

5. What is the correlation coefficient, r , of the data in the table? Use technology to calculate r .

x	y
68	219
78	192
78	235
60	220
78	240
65	224
74	228
60	212
67	208
68	203
75	191
61	234

a. $r = 0.00337$

b. $r = -0.058$

c. $r = -0.580$

d. $r = -0.134$

6. Anya is studying a textbook. Each day, she works through a few pages of the book. After reading a couple of pages, she began tracking how long it is taking her to work through the textbook, and finds that the equation $y = 14x + 2$ approximates the total pages studied after any number of days. Which statement is true based on this equation?
- a. Anya studies approximately 2 pages each day.
- b. Anya studies approximately 7 pages each day.
- c. Anya studies approximately 14 pages each day.
- d. Anya studies approximately 12 pages each day.
7. Jordan has a loan at a bank and makes monthly payments. He pays different amounts each month, but he can approximate the total amount he owes the bank using the equation $y = -150x + 1250$, where y is the total amount owed and x is the number of months in the loan repayment. Which statement is true based on the equation?
- a. He started with a total loan of \$150.
- b. He started with a total loan of \$1,100.
- c. He pays approximately \$1,250 each month.
- d. He pays approximately \$150 each month.

continued

UNIT 6 • DESCRIBING DATA

Lesson 3: Interpreting Linear Models

Assessment

8. What is the correlation coefficient, r , of the data in the table? Use technology to calculate r .

x	y
15	119
18	73
14	113
14	116
13	135
11	119
13	122
15	92
10	146
12	125
12	125
12	115

a. $r = -0.846$

b. $r = 0.716$

c. $r = -7.462$

d. $r = 116.67$

9. A data set has a correlation coefficient of -0.892 . Which statement about the data set is true?

a. The data has a strong positive linear correlation.

b. The data has a weak positive linear correlation.

c. The data has a strong negative linear correlation.

d. The data has a weak negative linear correlation.

10. Which statement describes a causal relationship?

a. When event x increases, event y decreases.

b. Event x and event y have a linear correlation.

c. When event x increases, event y increases.

d. Event x is responsible for a change in event y .

continued