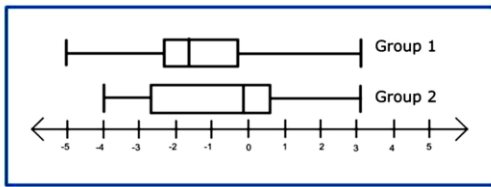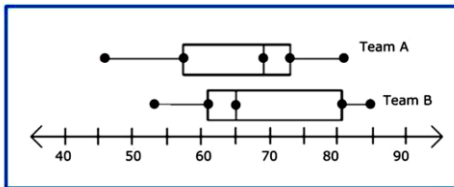1. Which group has the GREATEST spread in the upper 25% of their data?

   a) Group 1
   b) Group 2
   c) Group 1 and 2 have the same spread
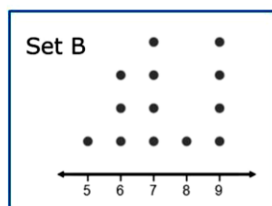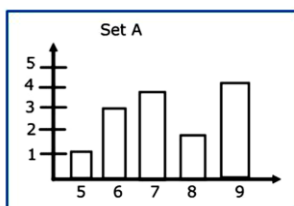   d) The spreads cannot be determined

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2. The number of points scored per basketball game for 2 teams has been recorded in the form of a box plot.

   Which team has the GREATEST median for points scored per basketball game?
   a) Team A
   b) Team B
   c) Same median
   d) Medians cannot be determined

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3. Which set of data has the GREATEST mean?

   a) Set A
   b) Set B
   c) Set A and B have the same mean, 7
   d) Set A and B have the same mean, 9

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4. Which correlation coefficient would BEST describe the relationship between two variables that have a WEAK, NEGATIVE correlation?

   a) -0.25   c) -0.84
   b) -0.63   d) -0.99

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5. The data set above shows students' scores on a test. Describe the shape of the data distribution if the student who scored 100 is NOT included in the data set.

70	72	73	74	74
75	75	75	75	76
77	77	78	80	100

   a) Skewed Right
   b) Symmetric
   c) Skewed left
   d) It is impossible to determine

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6. Ms. Warren collects information about her students. She records students' favorite movie types in the table and separates the responses by age. What is the marginal relative frequency of 15-year-olds?

Age	Favorite movie genre			
	Comedy	Romantic comedy	Action	Thriller
15 years old	8	14	22	9
16 years old	13	16	18	5

   a) 0.50
   b) 0.30
   c) 0.38
   d) 0.26

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7. Gerry collected data and made a table of relative frequencies on the number of students who participate in chorus and band.

		Chorus		
		Yes	No	Total
Band	Yes	0.38	0.29	0.67
	No	0.09	0.24	0.33
	Total	0.47	0.53	1.0

   Given that a student is not in chorus, what is the probability that he or she is in band?

   a) 0.29
   b) 0.43
   c) 0.38
   d) 0.55

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8. Which linear function is a good fit for the data in the given table?

x	y
1	6
2	12
3	15
4	24
5	28
6	32
7	35
8	40
9	46
10	52

   a) $y = 5x + 2$
   b) $y = 5x - 2$
   c) $y = -5x + 2$
   d) $y = -5x - 2$

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9. What does a correlation coefficient of 0.17 suggest about two variables?

   a) The variables are positively correlated, and x causes y.
   b) The variables are positively correlated, and x does not cause y.
   c) The variables are weakly correlated, and x causes y.
   d) The variables are weakly correlated, and x does not cause y.

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10. Which equation is the BEST fit for the data?
    a. $y = -x + 47$
    b. $y = -x + 39$
    c. $y = x + 39$
    d. $y = x + 47$

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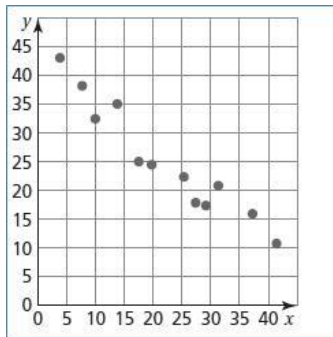
11. In this context, what does the slope of the linear function that models the data represent?

Value of Cars from Time of Sale

Age of Car (In Months)	Value of Car
0	$34,000
48	$10,000
24	$12,500
12	$20,250
18	$20,000
20	$14,150

   a) The original value of the car.
   b) The gain in value of the car.
   c) The loss in value of the car.
   d) The value of the car per month.

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12. Which of the following relationships below show no causation?

   a)   The age of an adult and the adult's pant size.
   b)   A decrease in rainfall and an increase in water restrictions.
   c)   The number of times suspended, and the amount of school days missed.
   d)   An increase in snow fall and the number of inches of snow reported.

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13. The graph shows the relationship between air temperature and altitude.

CHANGE IN TEMPERATURE
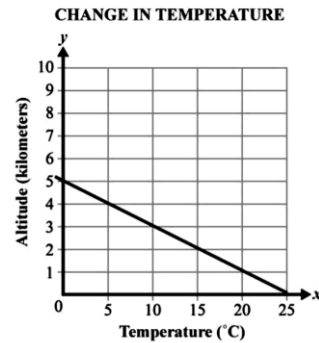
What is the meaning of the x-intercept in this context?
   a)   The air temperate at sea level
   b)   The altitude at which the air temperate is 0°C
   c)   The rate of change of temperature with altitude
   d)   The altitude at which air temperate is 5°C

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14. This table shows the average low temps in Fahrenheit, recorded in Macon GA and Charlotte, NC, over a six-day period.

Day	1	2	3	4	5	6
Temperature in Macon, GA (°F)	71	72	66	69	71	73
Temperature in Charlotte, NC (°F)	69	64	68	74	71	75

Which conclusion can be drawn from the data?

   a) The interquartile range of the temps is the same for both cities
   b) The lower quartile for the temps in Macon is less than the lower quartile for the temps in charlotte
   c) The mean and median temps in Macon were higher than the mean and median temps in charlotte
   d) The upper quartile for the temps in charlotte was less than the upper quartile for the temps in Macon

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15. A school was having a coat drive for a local shelter. A teacher determined the median number of coats collected per class and the interquartile range of the number of coats collected per class for the freshmen and sophomores.

- *The freshmen collected a median number of coats per class of 10 and the interquartile range was 6*
- *The sophomores collected a median number of coats per class of 10 and the interquartile range was 4*

Which range of numbers includes the third quartile of coats collected for both the freshmen and sophomores?

a) 4 to 14
b) 6 to 14
c) 10 to 16
d) 12 to 15

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16. A reading teacher recorded the number of pages read in an hour by each of her students. The numbers are listed below:

44, 49, 39, 43, 50, 44, 45, 49, 51

For this data, which summary stat is NOT correct?

a) The min is 39
b) The lower quartile is 44
c) The median is 45
d) The max is 51

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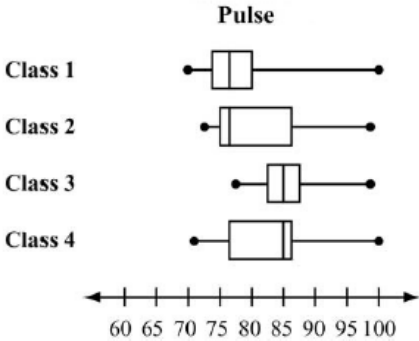
17. Which of these statements is an example of causation?

a)   When the weather becomes winter, more meat is purchase at the supermarket
b)   More people go to the mall when students go back to school
c)   The greater the number of new television shows, the fewer the number of moviegoers
d)   After operating costs are paid at a toy shop, as more toys are sold, more money is made

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18. A science teacher recorded the pulse of each of the students in her classes after the students had climbed a set of stairs. She displayed the results, by class, using the box plots provided.

Pulse

Which class generally had the higher pulse after climbing the stairs?

a) Class 1
b) Class 2
c) Class 3
d) Class 4

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19. Peter went bowling, Monday to Friday, two weeks in a row. He only bowled one game each time he went. He kept track of his scores below.

Week 1: 70, 70, 70, 73, 75
Week 2: 72, 64, 73, 73, 75

What is the BEST explanation for why Peter's Week 2 mean scores was lower than his Week 1 mean score?

a) Peter received the same score three times in week 1
b) Peter had one very low score in week 2
c) Peter did not beat his high score from week 1 in week 2
d) Peter had one very high score in week 1

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20. This histogram shows the frequency distribution of duration times for 107 consecutive eruptions of the Old Faithful geyser. The duration of an eruption is the length of time, in minutes, from the beginning of the spewing of water until it stops. What is the BEST description for the distribution?

a) Bimodal
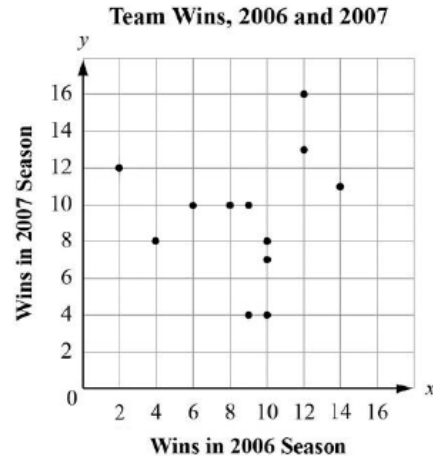
b) uniform

c) Multiple Outliers

d) Right Skewed

Duration of 107 Consecutive Old Faithful Eruptions

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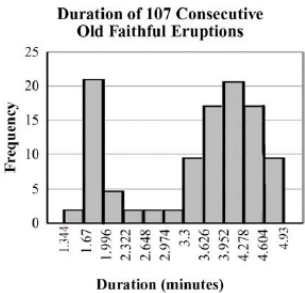
21. Which graph MOST clearly displays a set of data for which a quadratic function is the model of best fit?
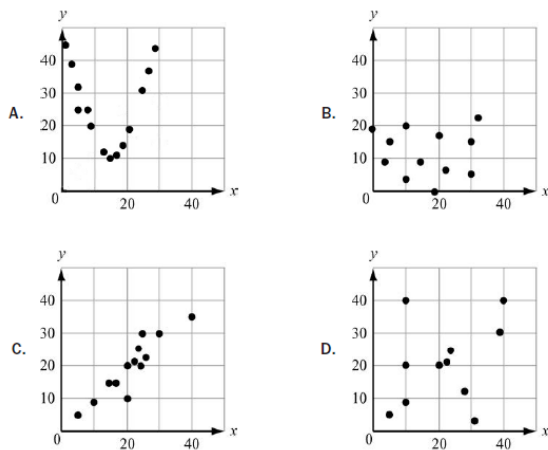
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22. A scientist studied the relationship between the number of trees, x, per acre and the number of birds, y, per acre in a neighborhood. She modeled the relationship with a scatter plot and use the equation y = 4 + 6x for the regression line. What is the meaning of the slope and y – intercept of this regression line?

a)   The slope is 6. This means that the average number of birds per acre in an area with no tress is 6. The y intercept is 4. This means that for every 1 additional tree, she can expect an average of 4 additional birds per acre.

b)   The slope is 4. This means that for every additional tree, she can expect an average of 4 additional birds per acre. The y intercept is 6. The average number of birds per acre in an area with no tress is 6.

c)   The slope is 6. This means that for every additional tree, she can expect an average of 6 additional birds per acre. The y intercept is 4. The average number of birds per acre in an area with no trees is 4.

d)   The slope is 4. This means that the average number of birds per acre in an area with no trees is 4. The y intercept is 6. This means that for every 1 additional tree, she can expect an average of 6 additional birds per acre.

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23-25: This graph plots the number of wins in the 2006 season and in the 2007 season for a sample of professional football teams.

Team Wins, 2006 and 2007

23. Which BEST describes the correlation of the two variables shown in the scatter plot?

a)   Weak positive
b)   Strong positive
c)   Weak negative
d)   Strong negative

24. Which equation BEST represents a line that matches the trend of the data?

a)   y = x + 2
b)   y = x + 7
c)   y = 3/5x + 1
d)   y = 3/5x + 5

25. Based on the regression model, what is the predicted number of 2007 wins for a team that won 5 games in 2006?

a)   4
b)   7
c)   8
d)   12

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