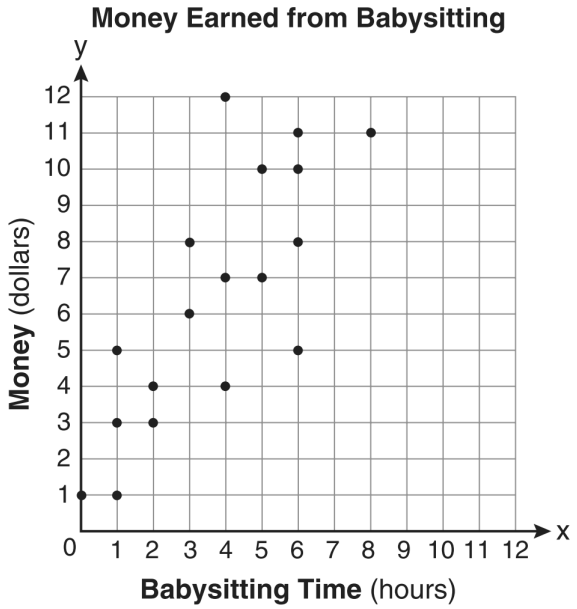
Line of Best Fit

Name: _____ **Date:** _____

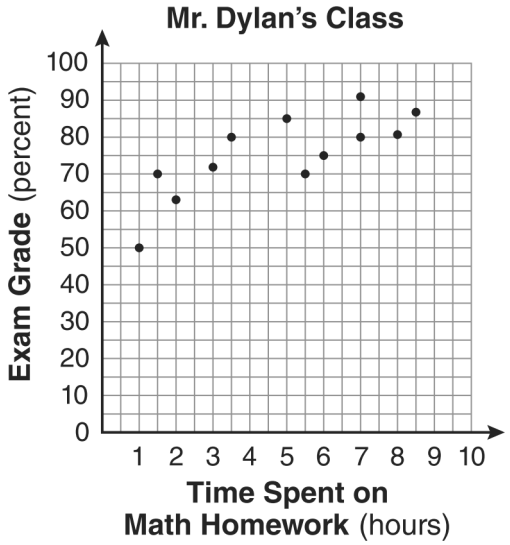
1. Which equation most closely represents the line of best fit for the scatter plot below?



A. $y = x$ B. $y = \frac{2}{3}x + 1$

C. $y = \frac{3}{2}x + 4$ D. $y = \frac{3}{2}x + 1$

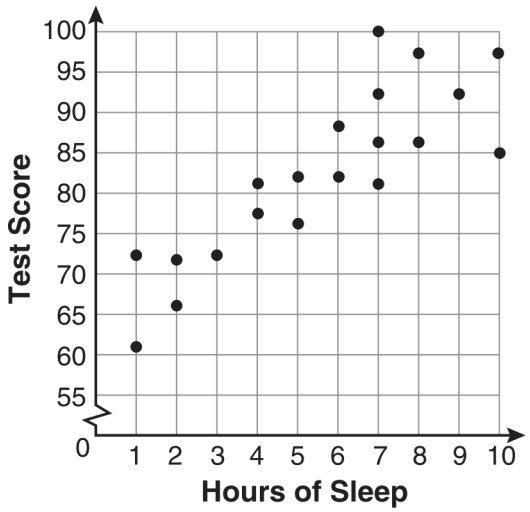
2. The number of hours spent on math homework each week and the final exam grades for twelve students in Mr. Dylan's algebra class are plotted below.



Based on a line of best fit, which exam grade is the best prediction for a student who spends about 4 hours on math homework each week?

A. 62 B. 72 C. 82 D. 92

3. What is the relationship between the independent and dependent variables in the scatter plot shown below?



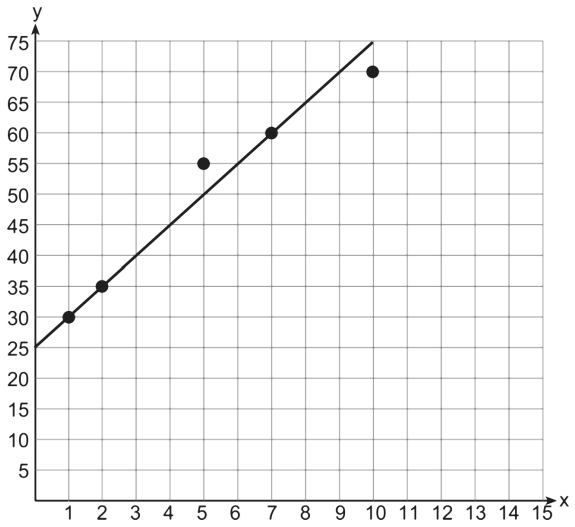
A. undefined correlation

B. negative correlation

C. positive correlation

D. no correlation

4. A scatter plot was constructed on the graph below and a line of best fit was drawn.



What is the equation of this line of best fit?

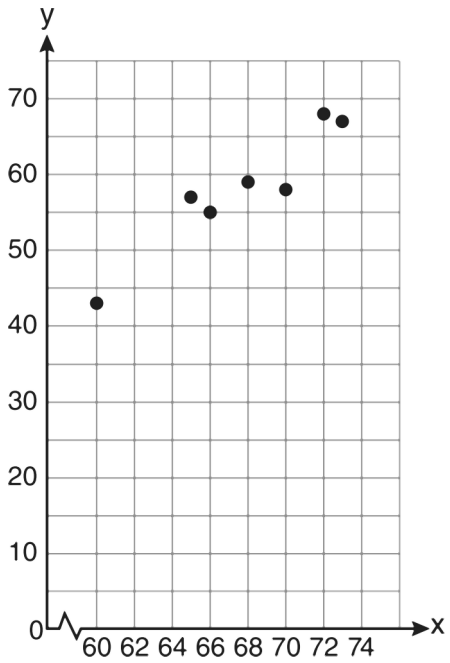
A. $y = x + 5$

B. $y = x + 25$

C. $y = 5x + 5$

D. $y = 5x + 25$

5. A set of data is graphed on the scatter plot below.



This scatter plot shows

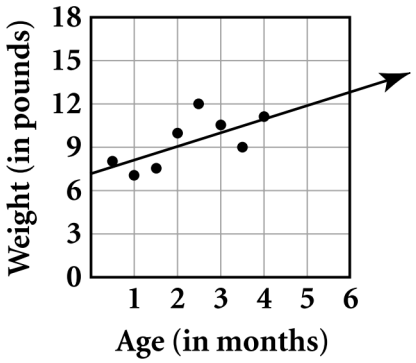
A. no correlation

B. positive correlation

C. negative correlation

D. undefined correlation

6. Thomas recorded the weight, in pounds, of several infants of different ages for his science experiment. He made a scatterplot of the data, as shown in the figure below.



He drew a line of best fit through the points. According to his line of best fit, at approximately what age, in months, should a typical infant weigh 17 pounds?

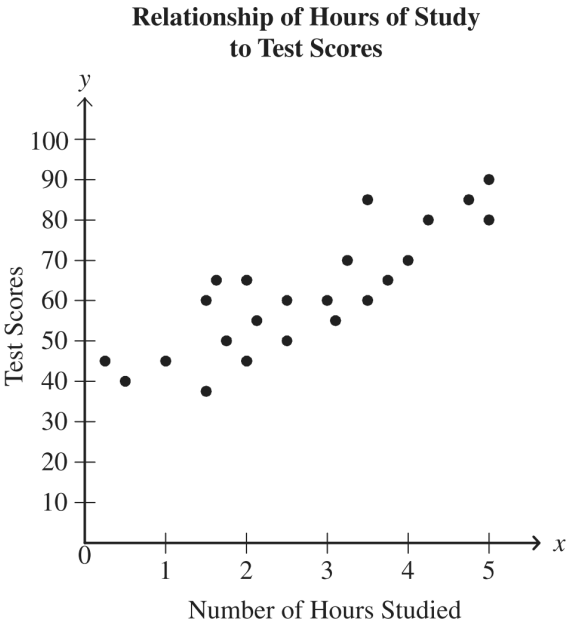
A. 6 months

B. 10 months

C. 13 months

D. 16 months

7. Ms. Kramer asked her students to report the number of hours they studied for their statistics test. The day after the test, she plotted the results on the scatterplot shown below.

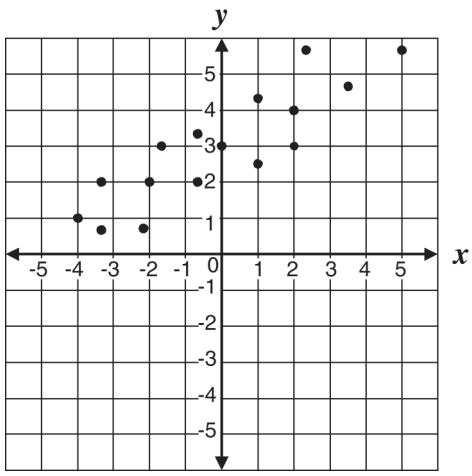


Which of the following equations correctly approximates the line of best fit?

A. $y = -10x + 30$ B. $y = -10x + 60$

C. $y = 10x + 30$ D. $y = 10x + 60$

8. *Use the graph below to answer the following question.*

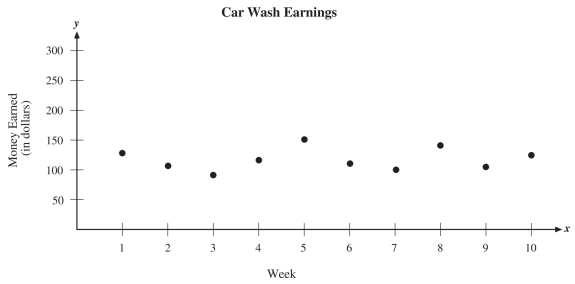


Which of the following equations *best* represents the data in the graph?

A. $y = 2x + 3$ B. $y = \frac{1}{2}x + 3$

C. $y = 2x - 3$ D. $y = \frac{1}{2}x - 3$

9. The students at Albemarle High held a car wash each week for 10 weeks to earn money for the student council. The students made the scatter plot below to represent the amount of the money they earned each week.

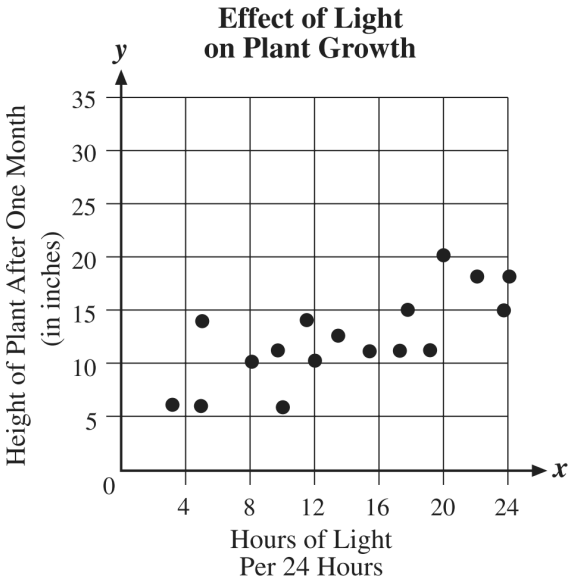


Which of the following equations *best* represents the line of best fit for these data?

A. $y = 110$ B. $y = 110x$

C. $y = x + 55$ D. $y = -x + 55$

10. Jenny studied the effect of light on plant growth. She graphed a scatterplot to represent her data.

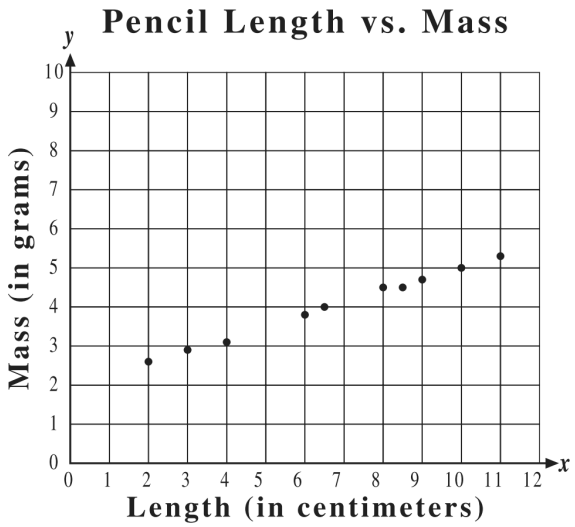


Which of the following *best* represents the equation for the line of best fit for the data shown?

A. $y = -4x + 5$ B. $y = 0.4x + 5$

C. $y = -0.4x + 5$ D. $y = 4x + 5$

11. The scatterplot below shows the length and mass of 10 pencils.

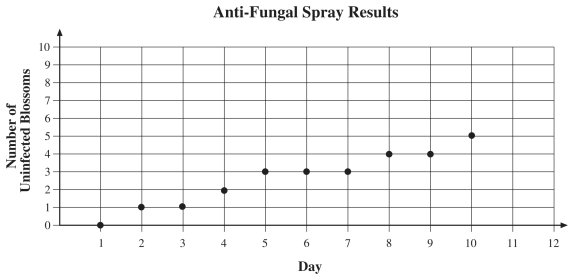


If x = length in centimeters and y = mass in grams, which of the following equations most closely approximates the line of best fit?

A. $y = 0.3x + 2$ B. $y = 0.3x + 5.3$

C. $y = 0.6x + 2$ D. $y = 0.6x$

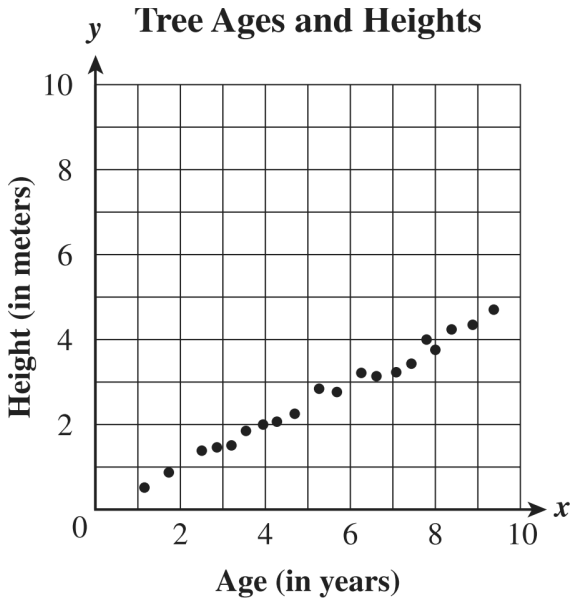
12. A scientist tested a new anti-fungal spray for roses. He sprayed an infected rose bush each day and recorded the number of uninfected blossoms. The following scatterplot shows his results.



Based on a line-of-best-fit for the scatterplot, how many uninfected blossoms would he expect to find on day 12?

A. 4 B. 6 C. 8 D. 10

13. The scatterplot below shows the ages and heights of 20 trees on a tree farm.



If x = age in years and y = height in meters, which of the following equations best approximates the line of best fit for this scatterplot?

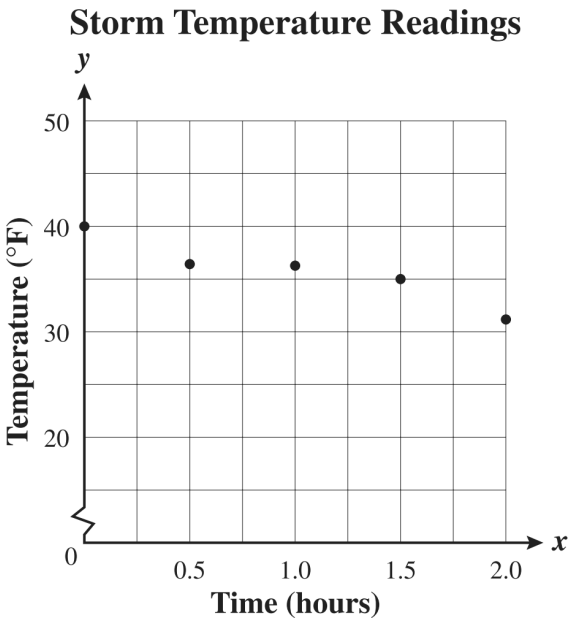
A. $y = \frac{1}{2}x$

B. $y = \frac{1}{2}x + 5$

C. $y = 2x$

D. $y = 2x + 5$

14. During the beginning of a recent storm, a weather broadcaster took temperature readings every half hour and plotted the data on the scatterplot below.



Which of the following most closely approximates the equation of the line of best fit for the data?

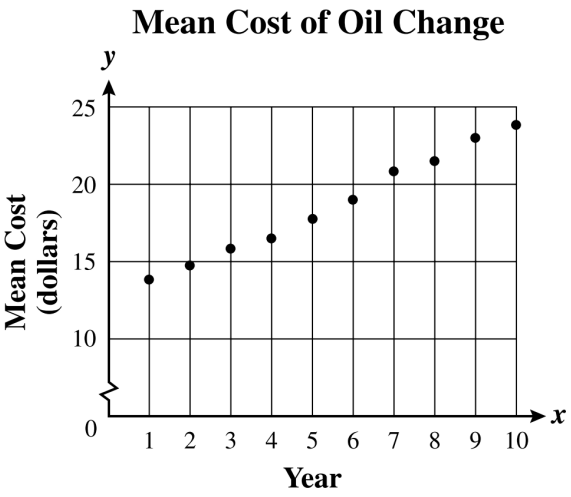
A. $y = -40x + 40$

B. $y = -3x + 40$

C. $y = 40x + 40$

D. $y = 3x + 40$

15. The scatterplot below shows the mean cost of an oil change for Sadie's car during each of the last 10 years.



Which of the following most closely approximates the equation of the line of best fit for the data in the scatterplot?

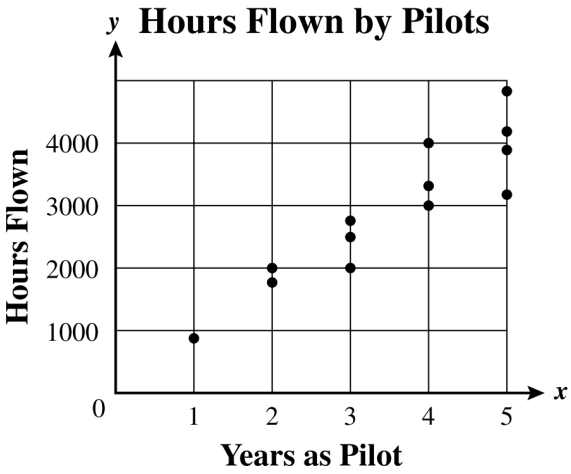
A. $y = 1.1x + 12.5$ B. $y = 0.2x + 12.5$

C. $y = -1.1x + 12.5$ D. $y = -0.2x + 12.5$

16. Dori asked 13 airplane pilots the following questions:

- "How many years have you been a pilot?"
- "How many hours have you flown?"

The scatterplot below shows the results of her survey.



Which of the following equations best represents the line of best fit for the data in the scatterplot?

A. $y = 0.001x$ B. $y = -0.001x$

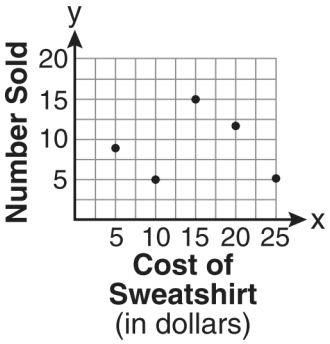
C. $y = -850x$ D. $y = 850x$

17. The school store did a study comparing the cost of a sweatshirt with the number of sweatshirts sold. The price was changed several times and the numbers of sweatshirts sold were recorded. The data are shown in the table below.

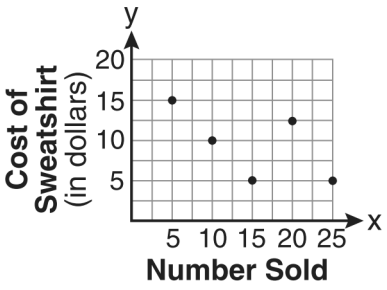
Cost of Sweatshirt	$10	$25	$15	$20	$5
Number Sold	9	6	15	11	14

Which scatter plot best represents the data?

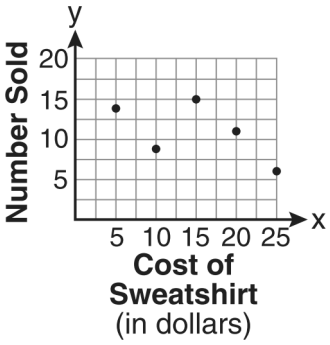
A.



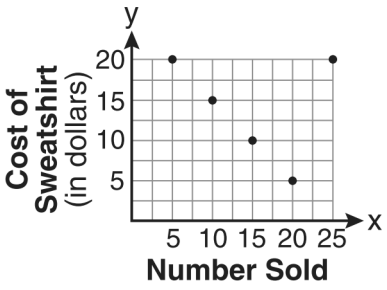
B.



C.



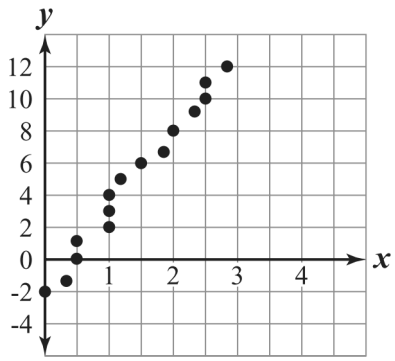
D.



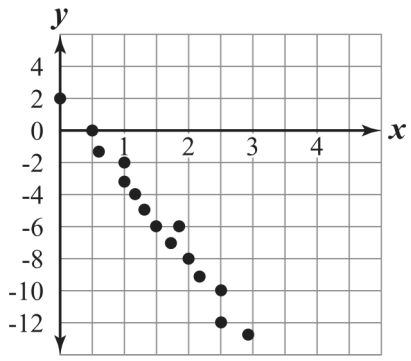
18. Which of the following scatterplots is most likely to have a line of best fit represented by the equation below?

$y = -5x + 2$

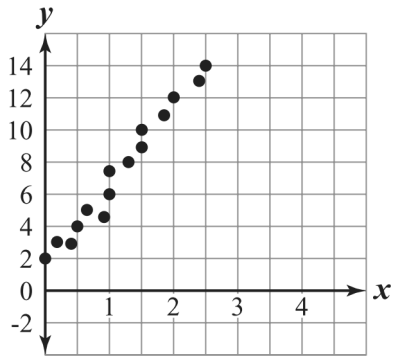
A.



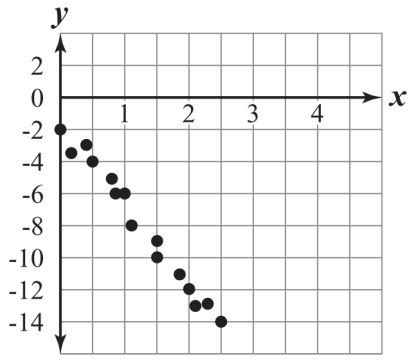
B.



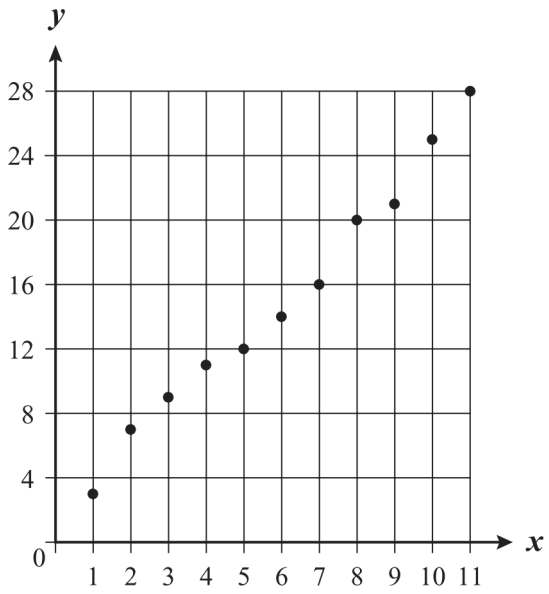
C.



D.



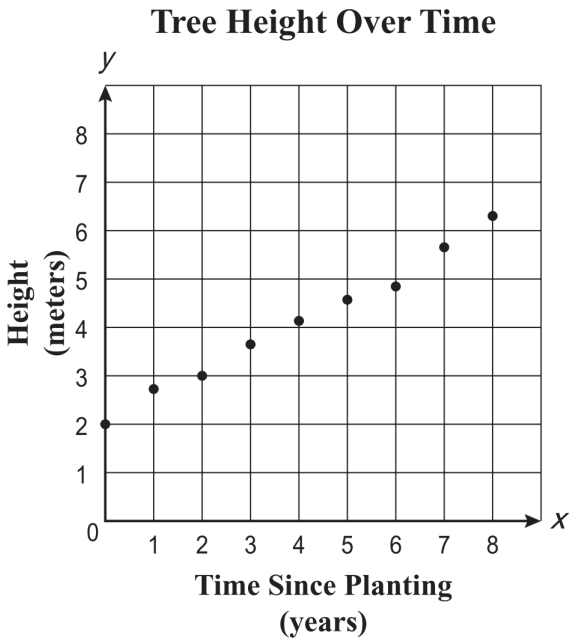
19. Which of the following equations best represents the line of best fit for the data shown in the scatterplot below?



A. $y = -2.5x + 1$ B. $y = 2.5x + 1$

C. $y = -0.6x + 1$ D. $y = 0.6x + 1$

20. Cynthia and her father planted a tree in their front yard 8 years ago. The tree was 2 meters in height when it was planted. The scatterplot below shows how the height of the tree increased each year.



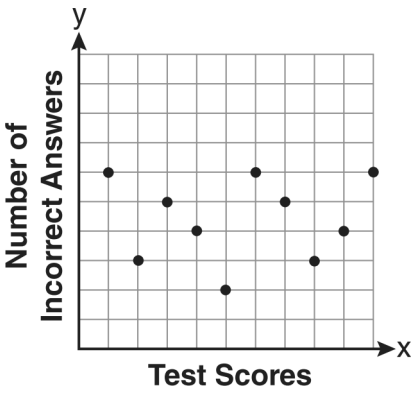
Which of the following most closely approximates the equation of the line of best fit for the data points in the scatterplot?

A. $y = -2x + 2$ B. $y = 2x + 2$

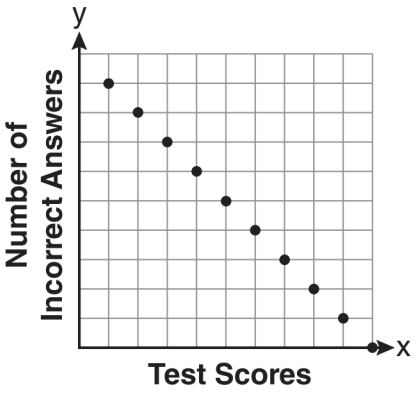
C. $y = -\frac{1}{2}x + 2$ D. $y = \frac{1}{2}x + 2$

21. Which scatter plot shows the relationship between x and y if x represents a student score on a test and y represents the number of incorrect answers a student received on the same test?

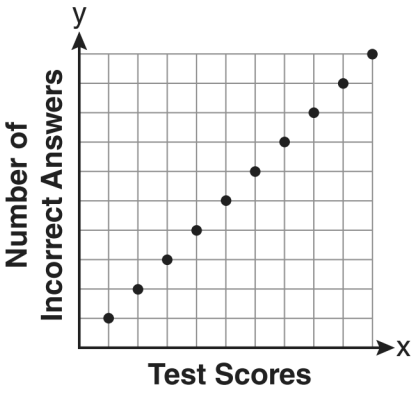
A.



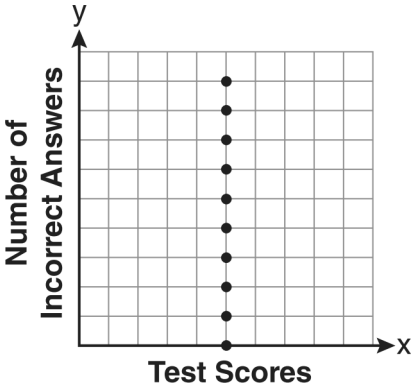
B.



C.

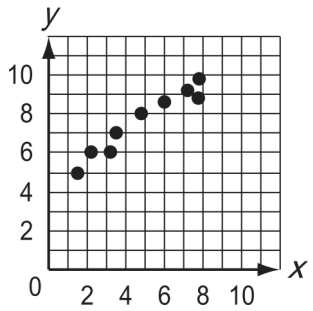


D.

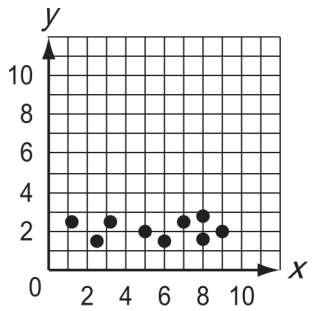


22. Beth drew a scatterplot and then correctly drew the line of best fit for her scatterplot. The line of best fit had a slope of 2. Which of the following is most likely Beth's scatterplot?

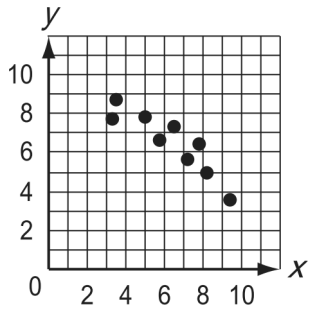
A.



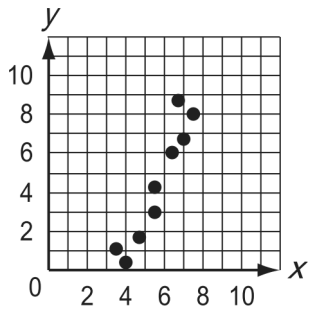
B.



C.



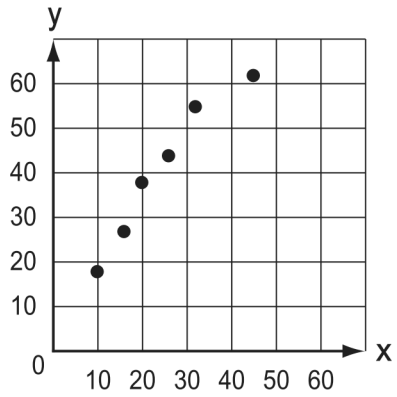
D.



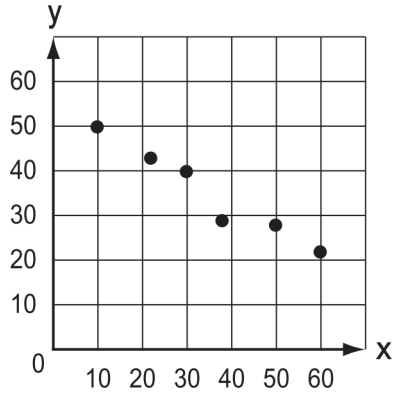
23. Which of the following scatterplots is most likely to have a line of best fit represented by the equation below?

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

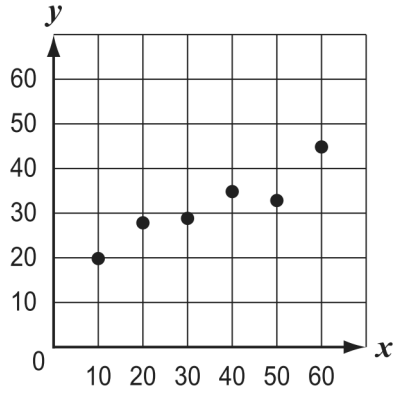
A.



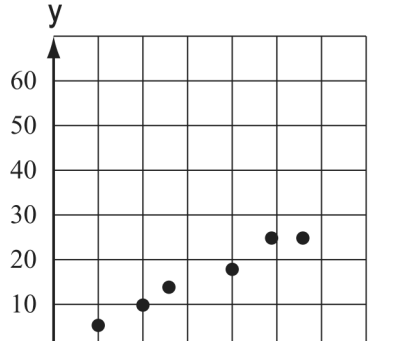
B.



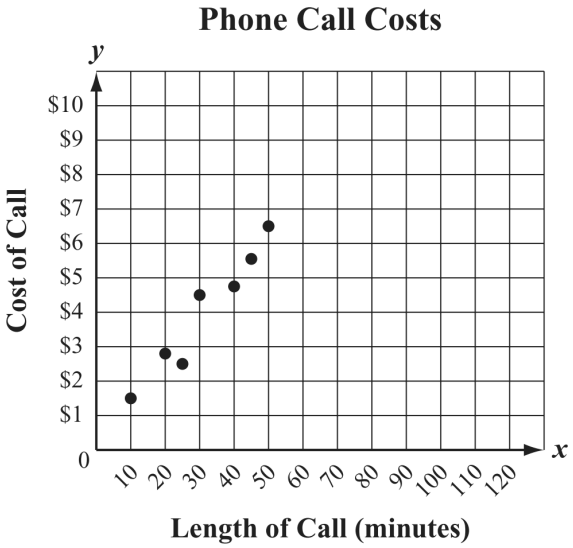
C.



D.



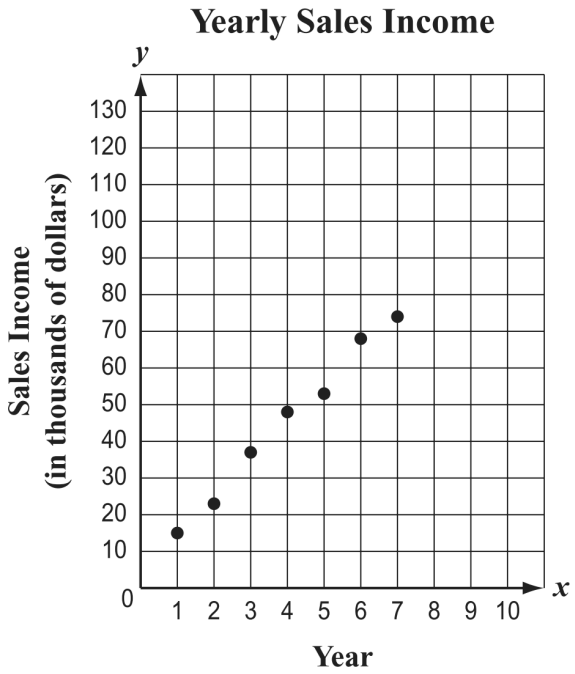
24. The scatterplot below shows the costs of phone calls of different lengths.



Based on the line of best fit for the scatterplot, which of the following is closest to the length of a call that costs $10?

A. 65 minutes
B. 80 minutes
C. 105 minutes
D. 120 minutes

25. The scatterplot below shows the sales income that a store made in each of its first seven years of business.

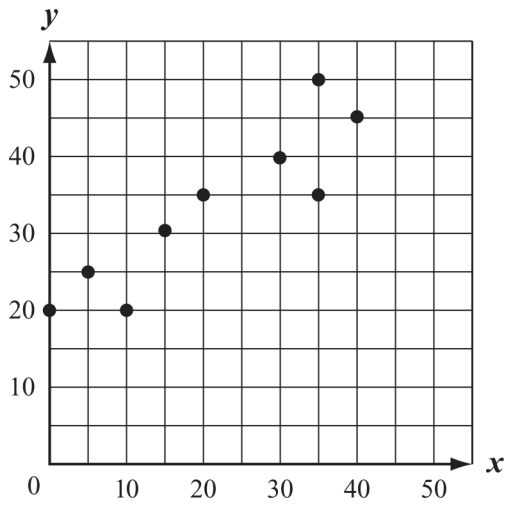


Based on the line of best fit for the scatterplot, which of the following is closest to the sales income that the store could expect to make in year 10?

A. \$75,000 B. \$85,000

C. \$110,000 D. \$130,000

26. Which of the following equations best represents the line of best fit for the scatterplot below?



A. $y = \frac{2}{3}x + 20$ B. $y = \frac{3}{2}x + 20$

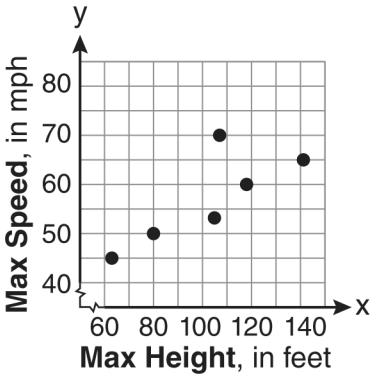
C. $y = -\frac{2}{3}x + 20$ D. $y = -\frac{3}{2}x + 20$

27. The maximum height and speed of various roller coasters in North America are shown in the table below.

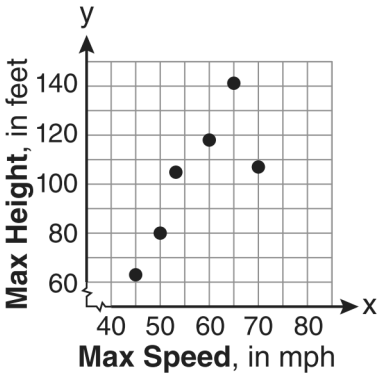
Maximum Speed, in mph, (x)	45	50	54	60	65	70
Maximum Height, in feet, (y)	63	80	105	118	141	107

Which graph represents a correct scatter plot of the data?

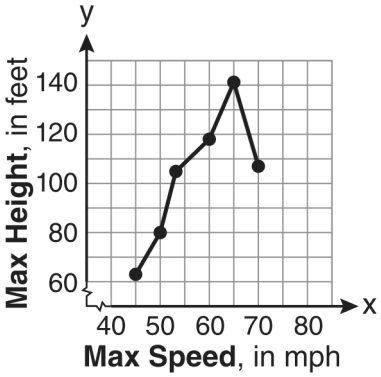
A.



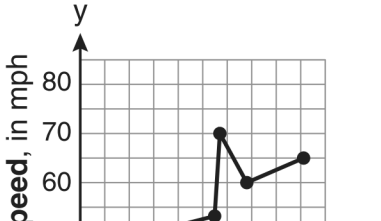
B.



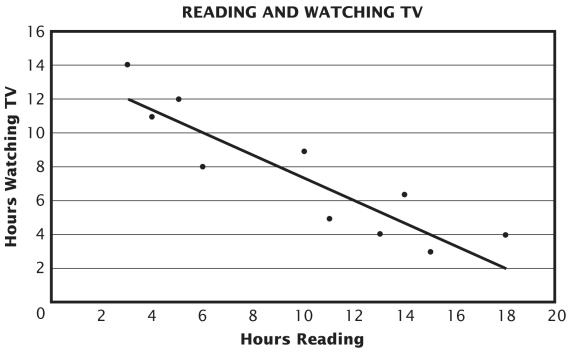
C.



D.



28. Susan surveyed students to find the amount of time they spent reading and watching TV last week. The scatter plot below shows the results of her survey.



According to the data in the scatter plot, how many hours of reading would you expect from a student who watches 6 hours of TV each week?

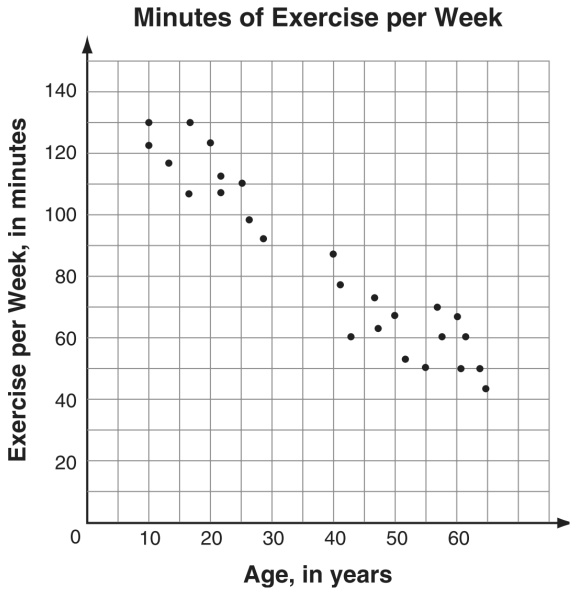
A. 8 hours

B. 10 hours

C. 12 hours

D. 14 hours

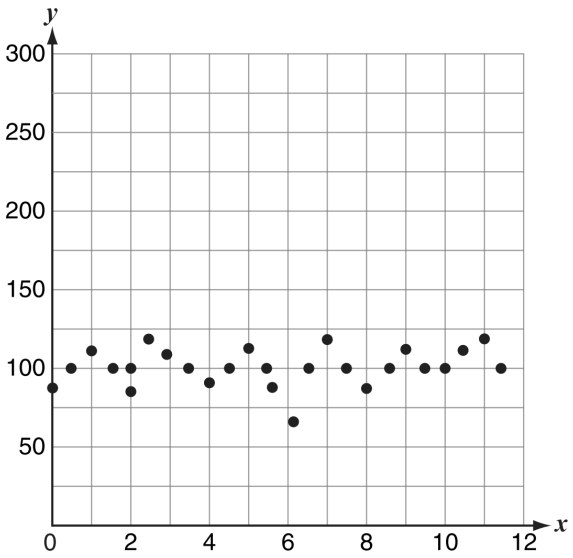
29. A survey was taken asking participants their age and the number of minutes they exercise per week. The results of the survey are shown in the scatterplot below.



The data for people who are 30 to 39 years of age are not displayed. Based on the scatterplot, how many minutes would a 30- to 39-year-old person be expected to exercise?

A. 40–60 minutes
B. 60–80 minutes
C. 80–100 minutes
D. 100–120 minutes

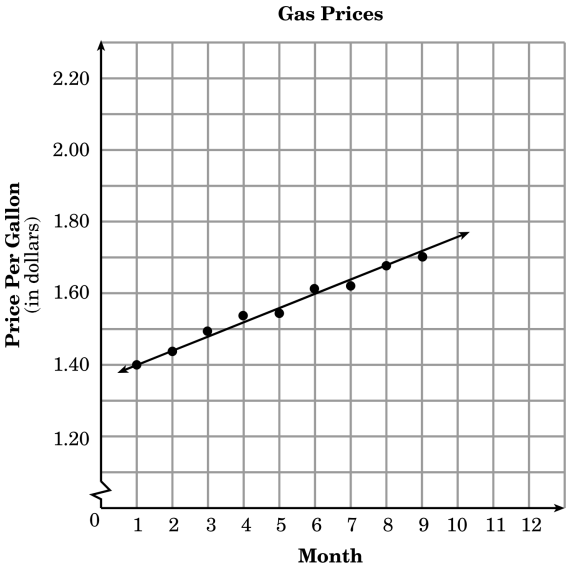
30. A scatterplot is shown on the graph below.



Which of these could be a line of best fit?

A. $y = x + 100$
B. $y = x - 100$
C. $x = 100$
D. $y = 100$

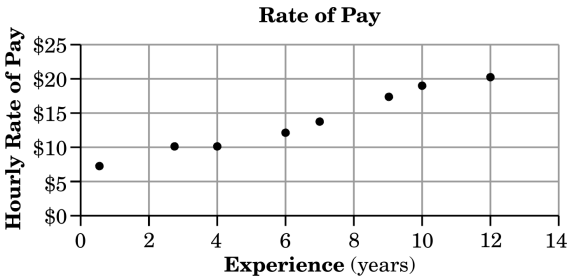
31. Jessica kept track of gas prices for 9 months.



According to the line of best fit shown, what will be the predicted price per gallon of gasoline in month 13?

A. $1.88 B. $1.80 C. $1.72 D. $1.40

32. The scatterplot below shows the years of experience and the hourly rate of pay for eight workers.

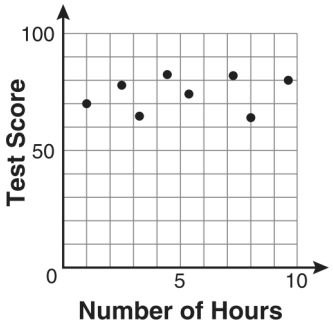


According to the trend shown in the scatterplot, *about* how many years of experience does a worker who earns $15 an hour have?

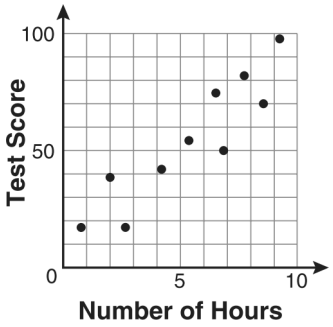
A. 4 B. 8 C. 12

33. There is a negative correlation between the number of hours a student watches television and his or her social studies test score. Which scatter plot below displays this correlation?

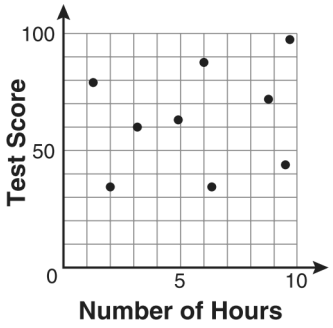
A.



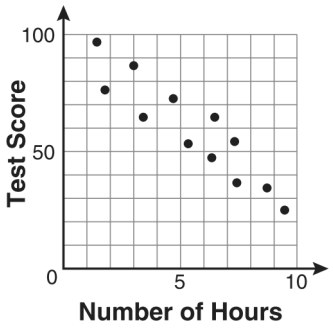
B.



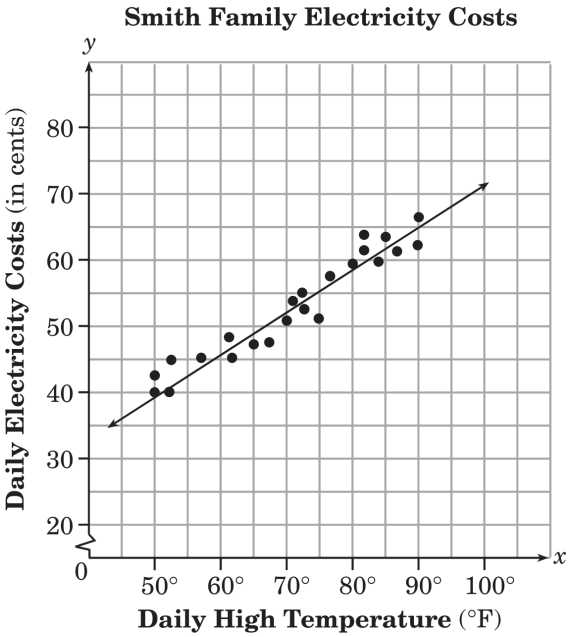
C.



D.



34. The Smiths made a scatterplot comparing their daily electricity costs to the outside temperature.



If the high temperature on a day is 95°, *about* how much will their cost for electricity be on that day?

A. \$0.95 B. \$0.70 C. \$0.67 D. \$0.64

35. Charles researched the price of video games over the last decade.

Based on the data shown, what would be the projected price of a video game in 2005?

A. \$9.50 B. \$15.50

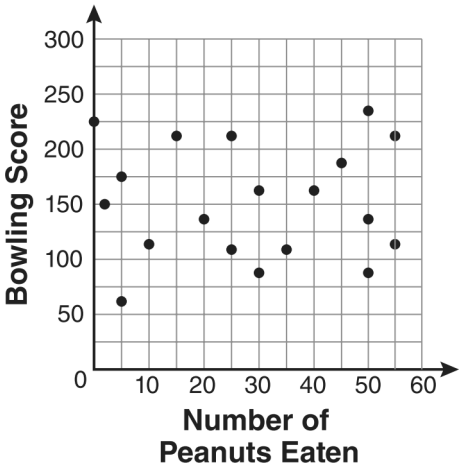
C. \$18.00 D. \$19.50

36. A scatterplot is shown to have a negative relationship between the two variables. Which line of best fit could represent that scatterplot?

A. $y = -2x + 4$ B. $y = -1$

C. $y = x - 5$ D. $y = 3x + 4$

37. The scatter plot below represents the relationship between the number of peanuts a student eats and the student's bowling score.



Which conclusion about the scatter plot is valid?

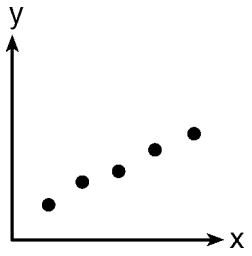
A. There is almost no relationship between eating peanuts and bowling score.

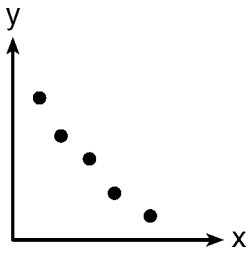
B. Students who eat more peanuts have higher bowling scores.

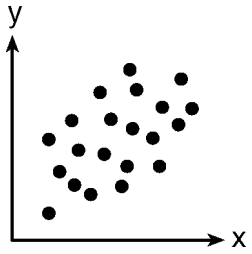
C. Students who eat more peanuts have lower bowling scores.

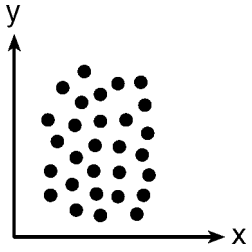
D. No bowlers eat peanuts.

38. Which scatter diagram shows the strongest positive correlation?

A.


B.


C.


D.


Line of Best Fit 02/27/2013

1.
Answer: D

2.
Answer: B

3.
Answer: C

4.
Answer: D

5.
Answer: B

6.
Answer: B

7.
Answer: C

8.
Answer: B

9.
Answer: A

10.
Answer: B

11.
Answer: A

12.
Answer: B

13.
Answer: A

14.
Answer: B

15.

16.
Answer: D

17.
Answer: C

18.
Answer: B

19.
Answer: B

20.
Answer: D

21.
Answer: B

22.
Answer: D

23.
Answer: D

24.
Answer: B

25.
Answer: C

26.
Answer: A

27.
Answer: B

28.

29.
Answer: C

30.
Answer: D

31.
Answer: A

32.
Answer: B

33.
Answer: D

34.
Answer: C

35.
Answer: B

36.
Answer: A

37.
Answer: A

38.
Answer: A