

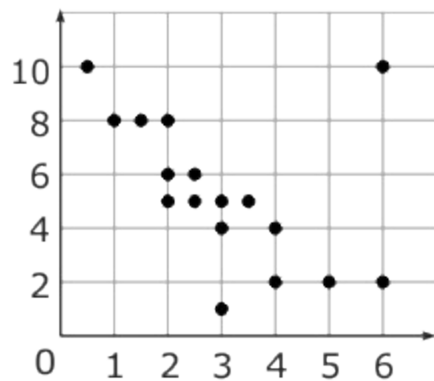
TEST NAME: **Math 8 Scatterplot Practice 2017**
TEST ID: **1606694**
GRADE: **08 - Eighth Grade**
SUBJECT: **Mathematics**
TEST CATEGORY: **School Assessment**

Student: _____

Class: _____

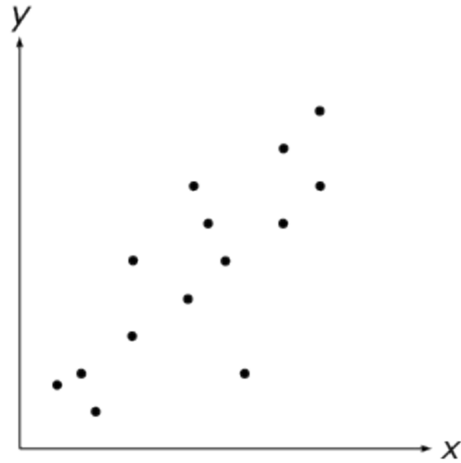
Date: _____

1. Based on the data in the scatterplot, which point would **most likely** be considered an outlier?



- A. (0.5, 10)
- B. (3, 1)
- C. (6, 2)
- D. (6, 10)

2. What type of association is shown in the scatterplot below?



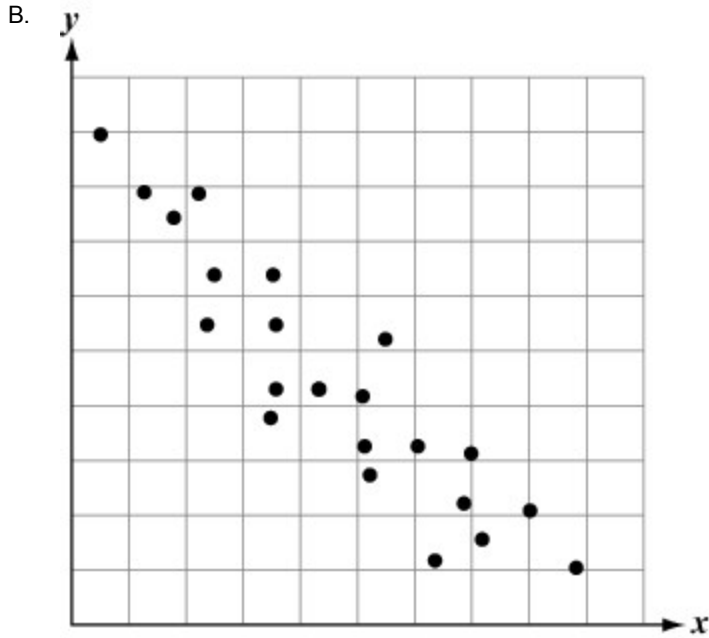
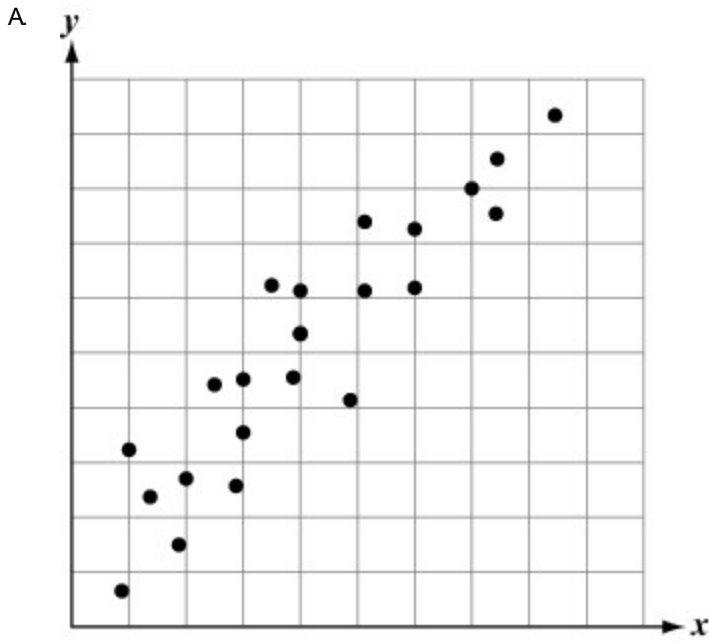
- A. positive
- B. negative
- C. none

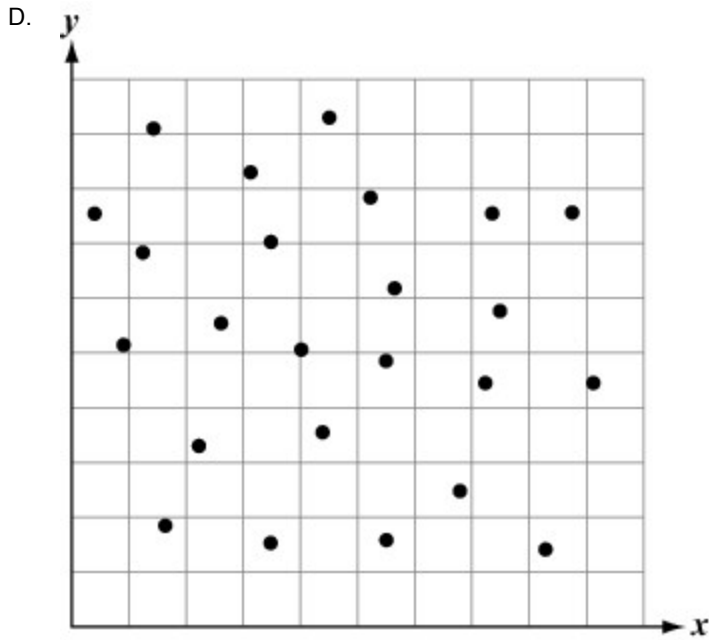
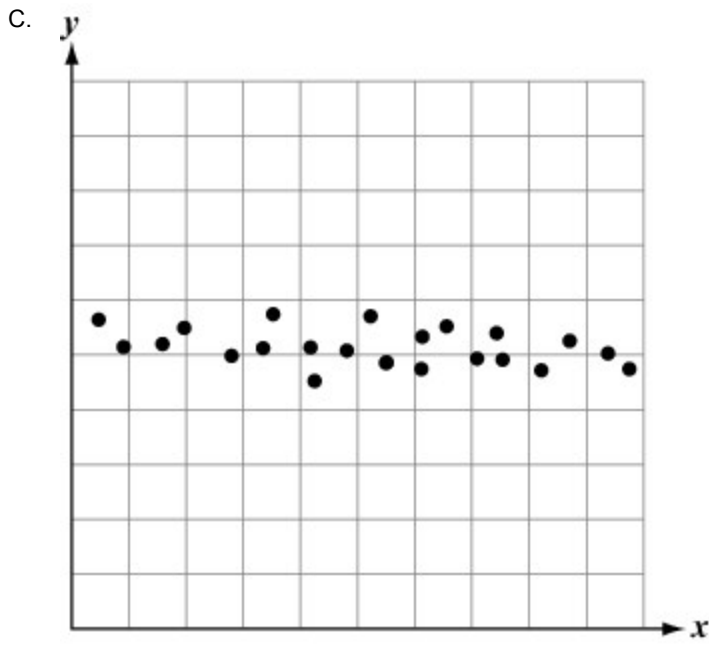
3. What type of relationship exists between the data?

x	0	1	2	3	4	5	6	7	8	9	10
y	21	20	23	19	16	19	17	17	9	12	8

- A. positive
- B. negative
- C. varied
- D. no relationship

4. Which scatter plot shows a negative linear association between x and y ?

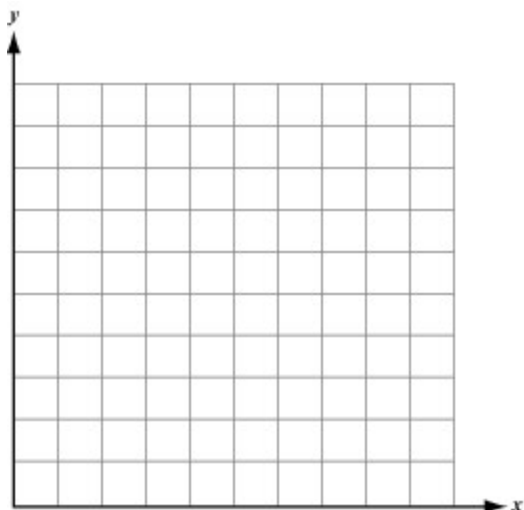




5. The table represents test scores of students studying for different amounts of time.

Number of Hours Studied	Score
2	58
3	66
4	78
3	68
3	60
2	60
4	71
1	45
5	80
4	68

Part A. Use the given table to construct a scatter plot in the grid below. Label the graph with appropriate scales and titles.

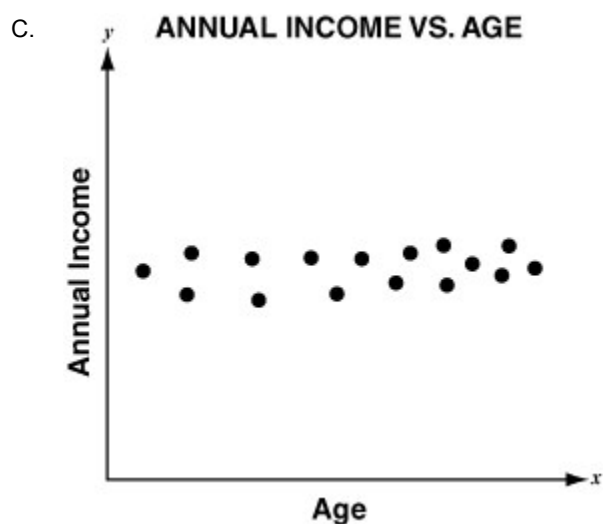
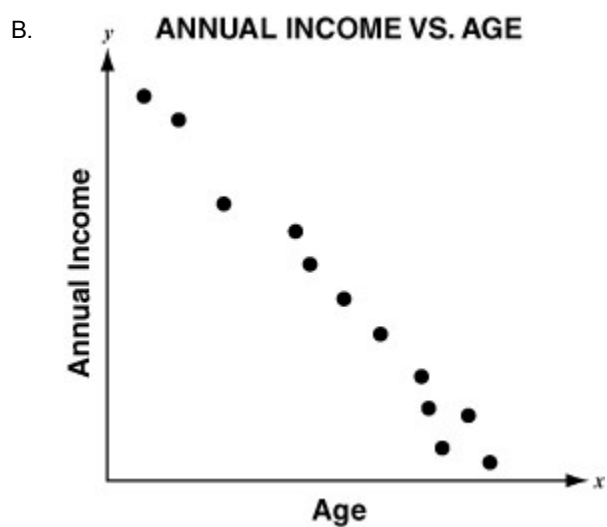
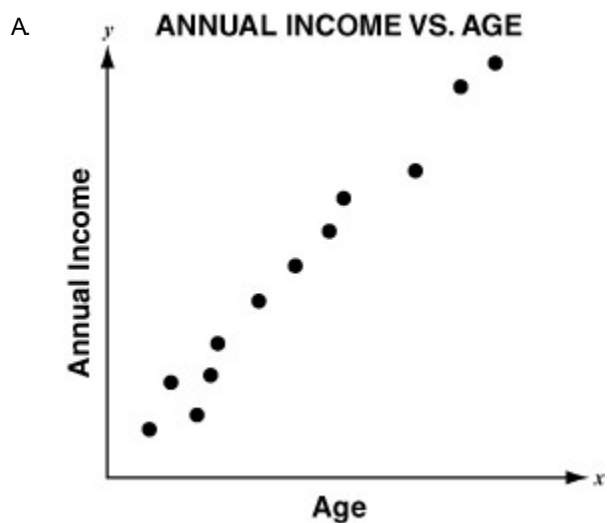


Part B. Is the relationship between the scores and study hours linear or nonlinear?

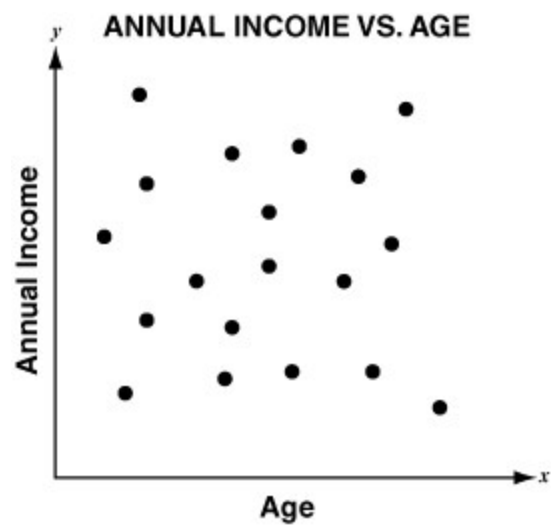
Part C. Describe the correlation between the scores and hours studied.

Use words, numbers, and/or pictures to show your work.

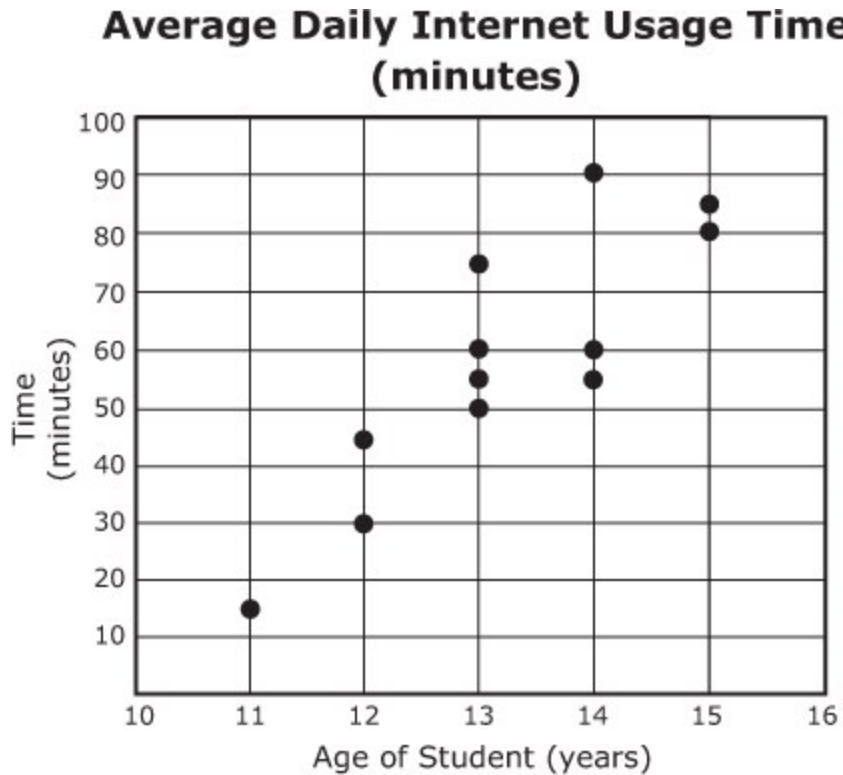
6. There is a positive linear correlation between the annual income and the age of a person before retirement. Which scatter plot **best** represents this situation?



D.



7. Students of different ages were asked to record an estimate of the average daily time, in minutes, they spend on the Internet. The results are shown on the scatter plot below.



Which pattern of association between the two quantities is **most** representative in the scatter plot?

- A. a negative nonlinear association
- B. a positive nonlinear association
- C. a negative linear association
- D. a positive linear association

8. Which data set **most closely** represents a linear relationship?

A.

x	4	2	0	3	1	3	1	6
y	5	-1	0	4	-2	-3	1	-4

B.

x	0	1	1	2	2	3	3	4
y	0	-3	2	5	-4	-11	8	11

C.

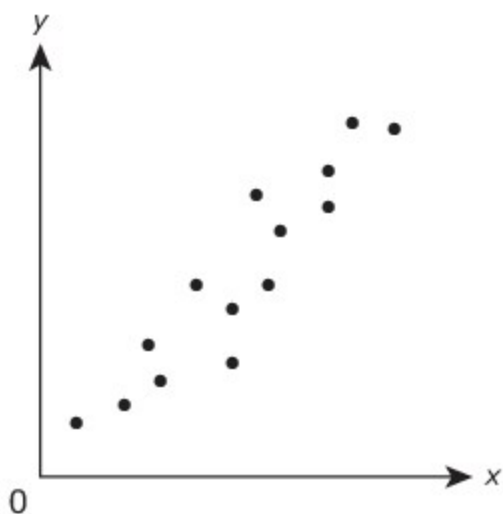
x	0	-4	5	3	-2	-6	7	2
y	3	0	7	5	2	-2	7	3

D.

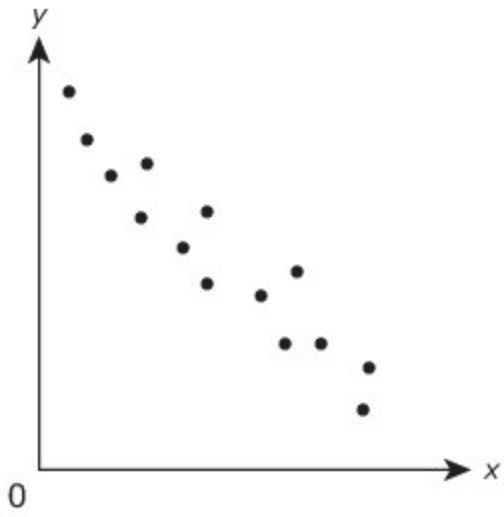
x	4	1	0	2	8	5	9	10
y	5	0	-2	1	0	1	3	-4

9. Which scatter plot shows a nonlinear association between the two quantities?

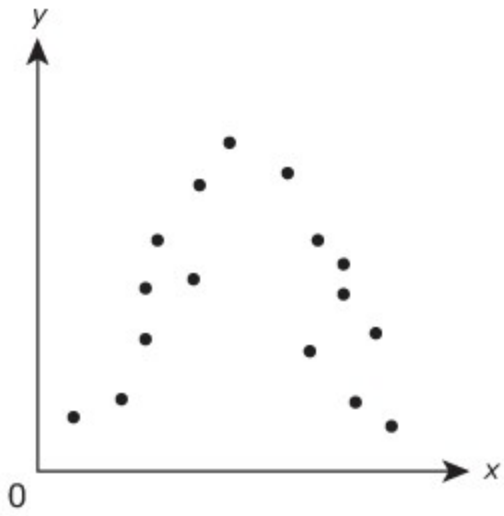
A.



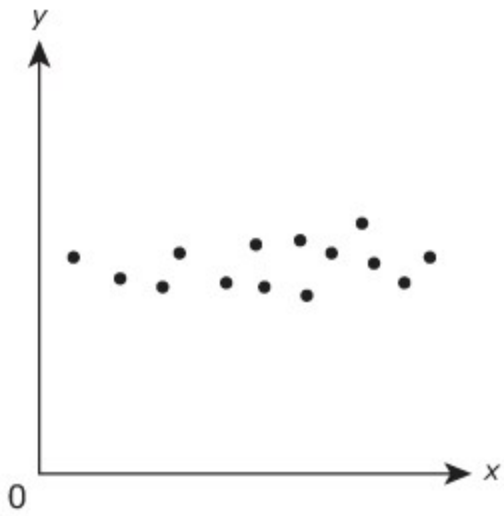
B.



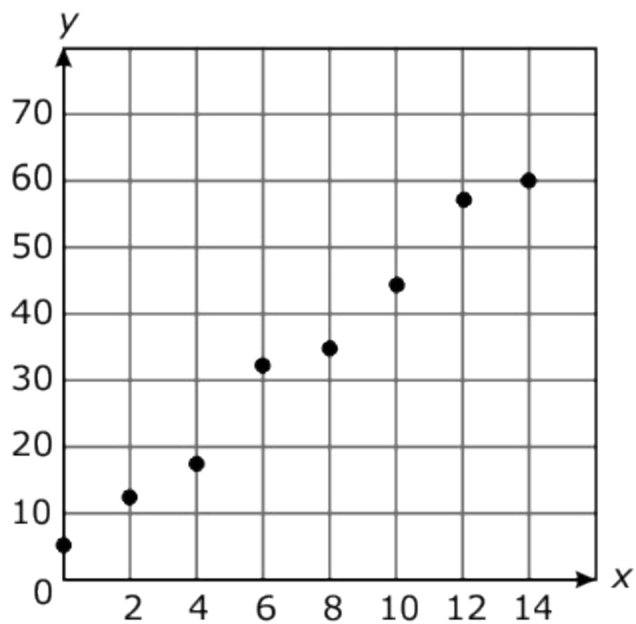
C.



D.

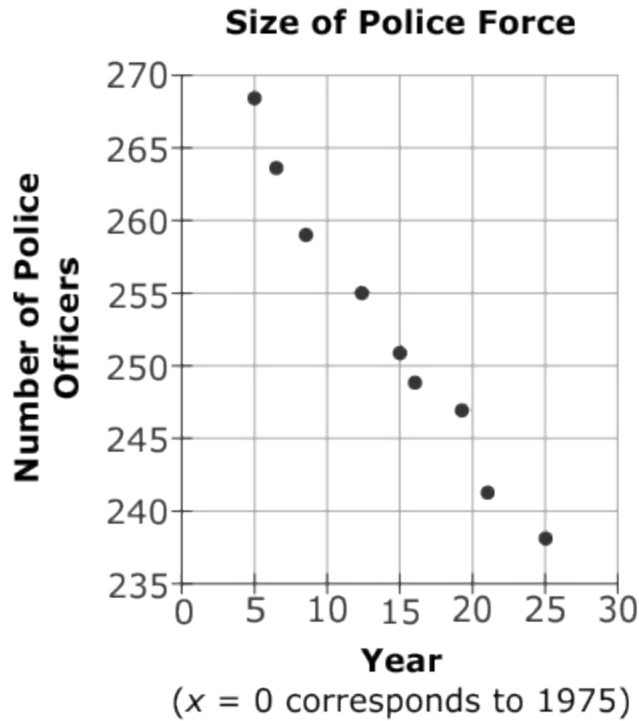


10. Which equation would **best** fit the data in the scatterplot below?



- A. $y = x + 5$
- B. $y = 2x + 5$
- C. $y = 4x + 5$

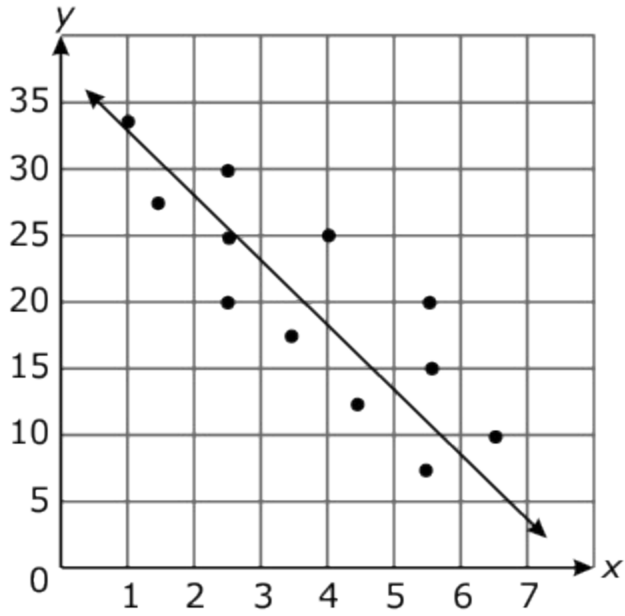
11. A police department created a scatterplot using data showing the number of police officers in a city over several years.



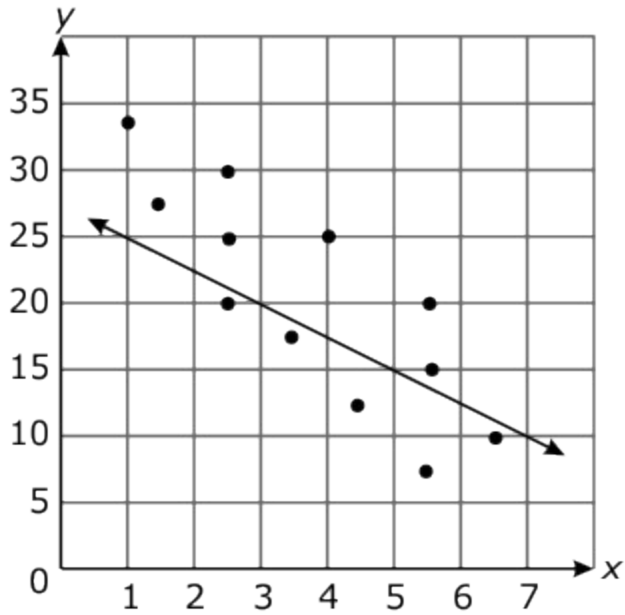
In 1983, there were 258 police officers. In 1994, there were 247 police officers. Which equation **best** fits this data?

- A. $y = -x + 266$
 - B. $y = -x + 250$
 - C. $y = -11x + 266$
 - D. $y = -11x + 250$
12. Which scatterplot shows a line that **most closely** fits the data?

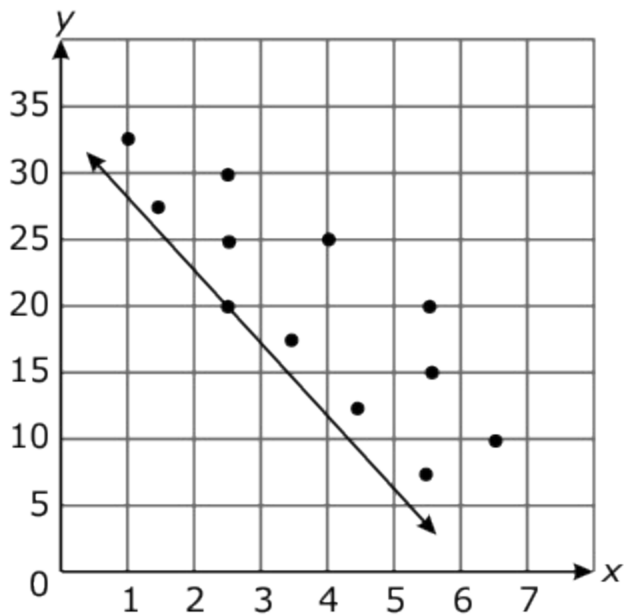
A.



B.



C.



13. The table shows the value of a video game system since introduced in 2003.

Year (since 2003)	0	1	2	3
Value (\$)	700	520	250	120

Which equation **best** fits the data?

- A. $y = -700x + 200$
- B. $y = -200x + 700$
- C. $y = 200x - 700$
- D. $y = 700x - 200$

14. The table shows the age and value of a vehicle over several years.

Age of Vehicle (years)	Value (\$)
1	20,000
2	18,500
3	16,000
4	14,500
5	12,000

Which equation would **best** fit the data?

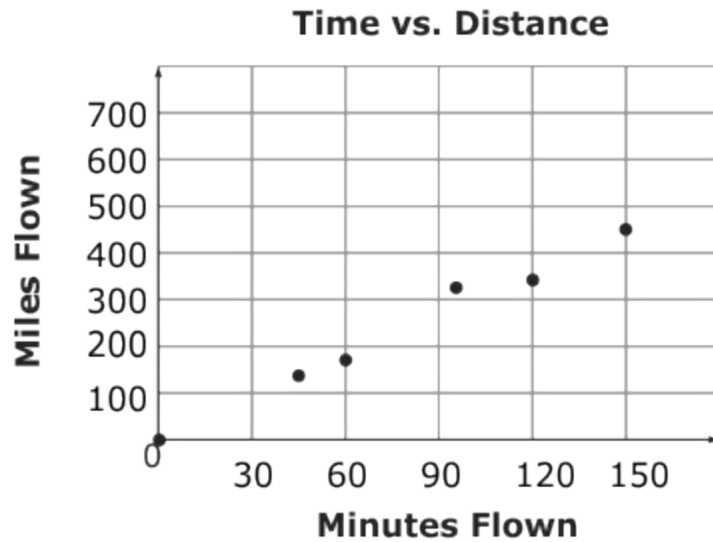
A. $y = -1,500x + 20,000$

B. $y = 1,500x + 20,000$

C. $y = -2,000x + 22,000$

D. $y = 2,000x + 22,200$

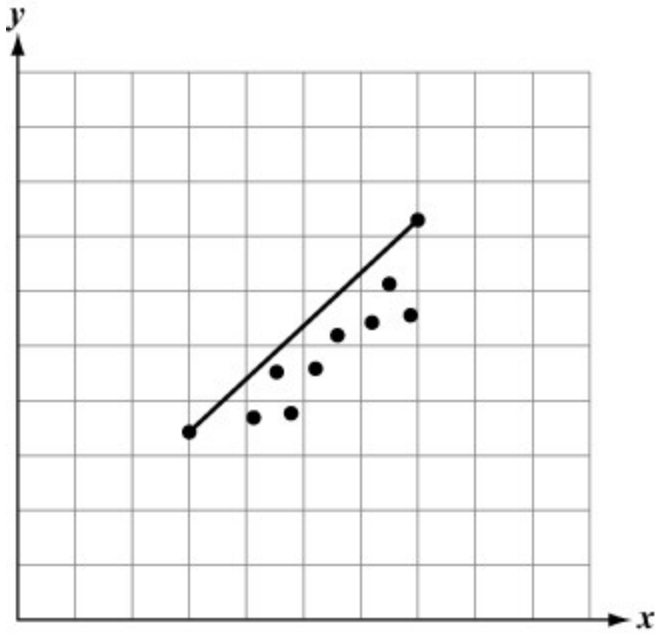
15. The graph below shows the relationship between the number of miles flown in a plane after several minutes.



Which equation **best** fits the data?

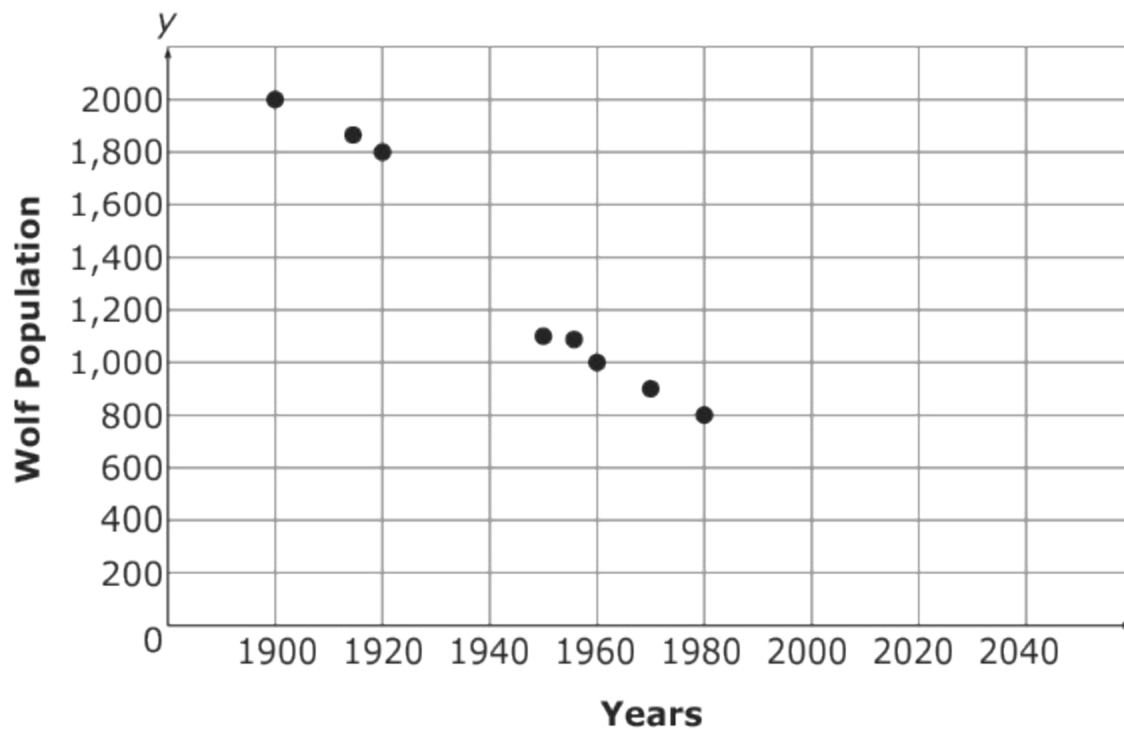
- A. $y = 2x$
- B. $y = 3x$
- C. $y = 30x$
- D. $y = 60x$

16. Maria is creating a scatter plot for a science lab she is doing. She plotted the data from her lab on a grid and drew a line to represent the relationship between the variables as shown below. Which of these statements **best** describes whether or not Maria's line is the line of best fit?



- A. Maria's line is the best fit because it is close to all the data points.
- B. Maria's line is the best fit because the line passes through the first and last data points.
- C. Maria's line is not the best fit because it does not pass through the majority of the data points.
- D. Maria's line is not the best fit because it does not represent the majority of points that are below it.

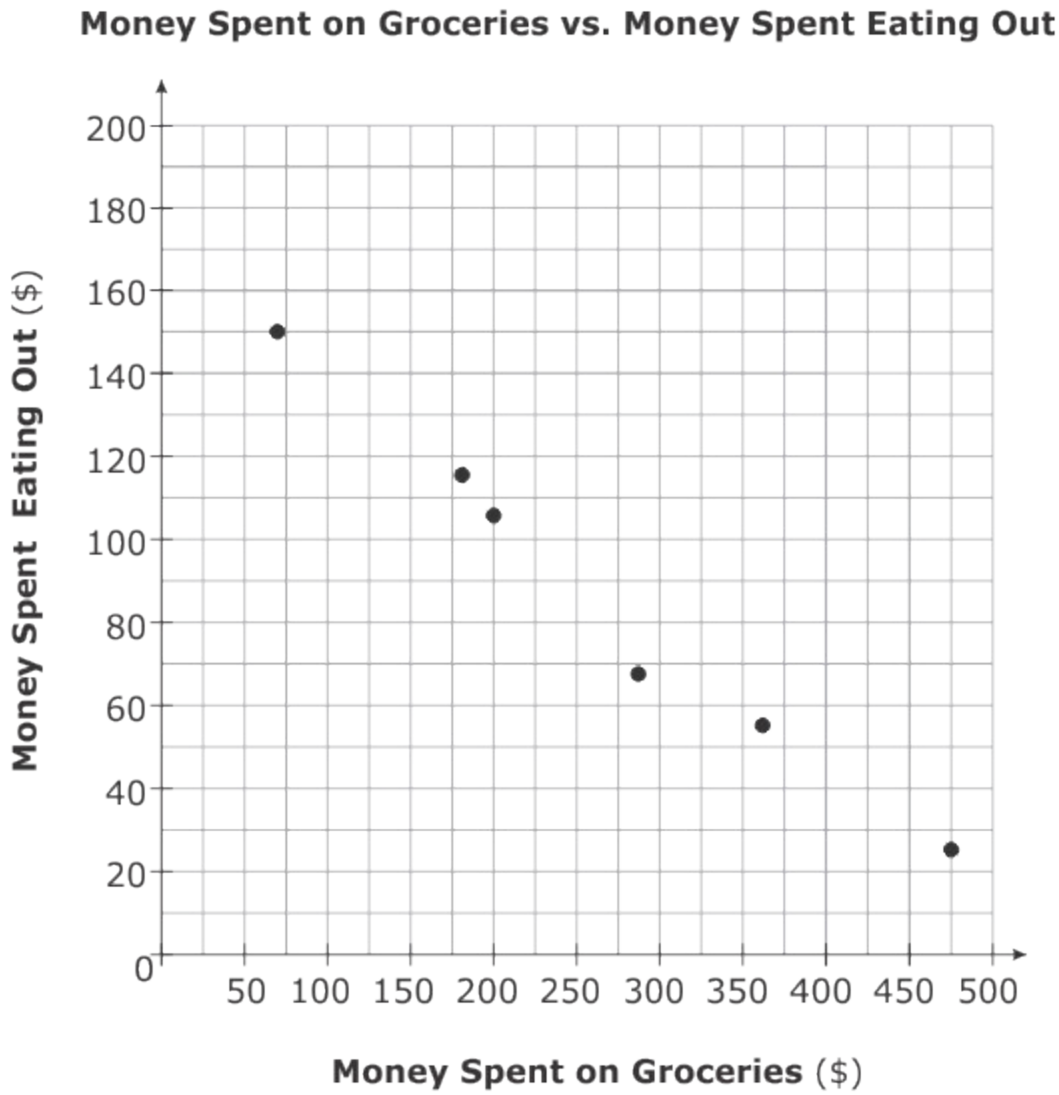
17. The graph shows the wolf population near a city.



Using a linear model, what is the **best** estimate of the wolf population in 2020?

- A. 100
- B. 400
- C. 500
- D. 800

18. The scatterplot below shows the relationship between the money spent on groceries each week, x , and the amount of money spent eating out at restaurants, y , during that same week by six different families.



Using a linear model for this scatterplot, what does the y -intercept represent?

- A. the amount of money spent eating out if there are no groceries purchased
- B. the amount of money spent on groceries when a family does not go out to eat
- C. the decrease in the amount of money spent eating out for each dollar spent on groceries
- D. the increase in the amount of money spent eating out for each dollar spent on groceries

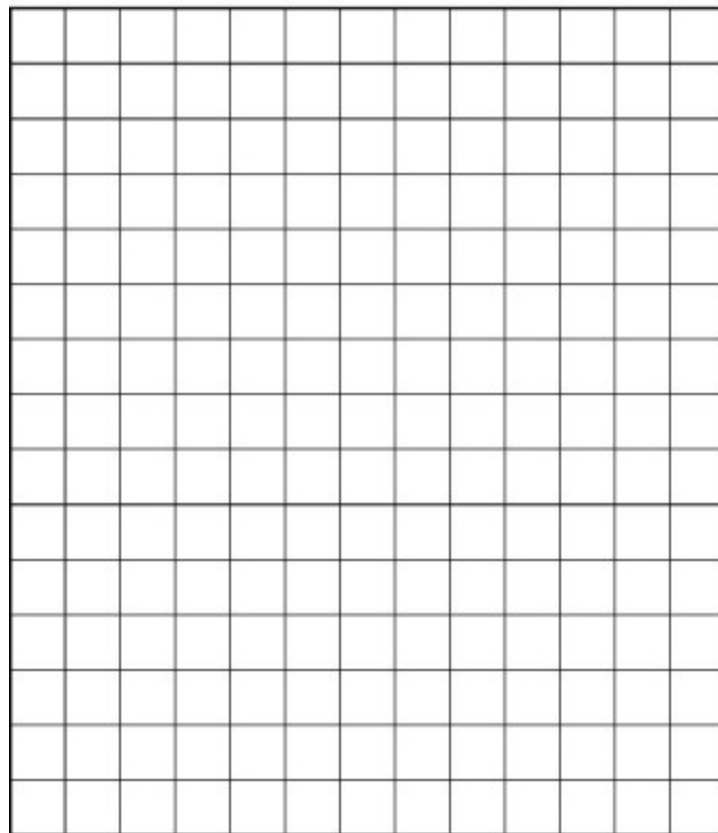
19. Matt recorded his average bowling score at the end of each month for a year.

Matt's Average Bowling Scores

Month	1	2	3	4	5	6	7	8	9	10	11	12
Average Score	78	83	100	98	105	120	122	135	148	162	150	167

Part A Construct a scatter plot for Matt's average bowling scores. Be sure to label the axes and use appropriate scales.

Matt's Average Bowling Score



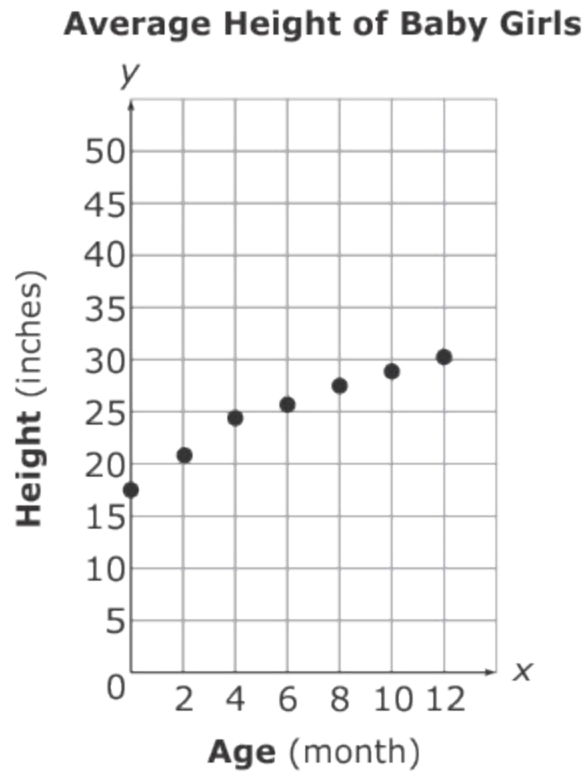
Part B Draw a line of best fit on the scatter plot.

Part C What does the slope of the line represent in this situation?

Part D Use the line to predict Matt's average bowling score in month 15. Show or explain your work.

20. Based on the records of the weight of different newborn babies recorded in a pediatrician's clinic last year, the clinic predicted that the weight of a newborn baby for the first 12 months could be modeled by the equation $w = 1.08m + 7.2$, where w represents the weight, in pounds, of the baby after m months. What do the slope and y -intercept of the equation represent?
- A. The weight of a baby at 12 months is 1.08 pounds and increases by 7.2 pounds every 12 months.
 - B. The weight of a baby at 12 months is 7.2 pounds and increases by 1.08 pounds every 12 months.
 - C. The weight of a baby at birth is 7.2 pounds and increases by 1.08 pounds every month.
 - D. The weight of a baby at the time of birth is 1.08 pounds and increases by 7.2 pounds every month.

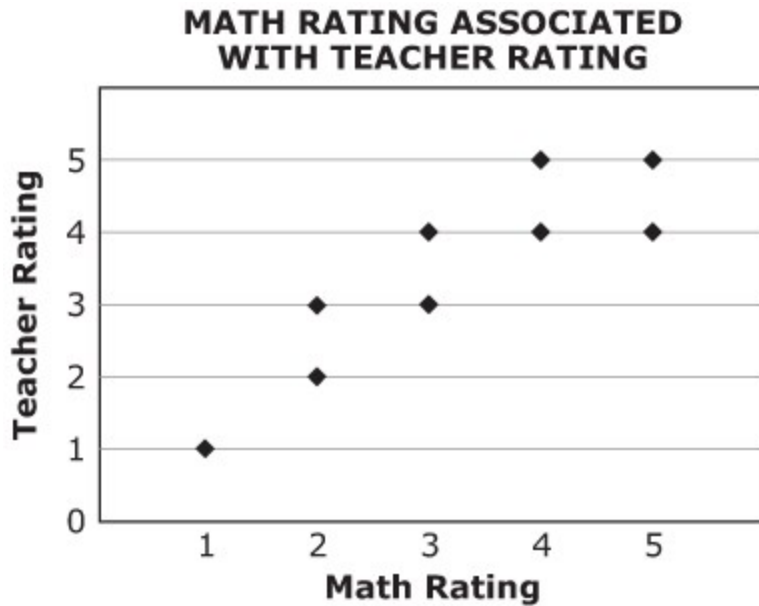
21. The scatterplot below represents the average height of girls from birth to 12-months of age.



Based on a linear model of the data, what is the **approximate** average height of a 16-month-old girl?

- A. 17 inches
- B. 31 inches
- C. 35 inches
- D. 40 inches

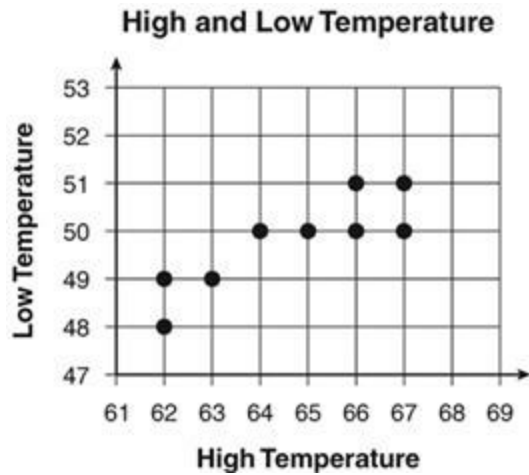
22. Sean conducted a survey among his classmates to determine if there was an association between how much they like math and how much they like their math teacher. He asked his classmates to use a rating scale of 1 to 5, where 1 is the lowest and 5 is the highest. Sean graphed the ratings data from his survey on this scatter plot.



Based on this scatter plot, which statement is true?

- A. There is a cluster of data that shows no relationship between how much Sean's classmates like math and how much they like their math teacher.
- B. There is an outlier in the data that shows no relationship between how much Sean's classmates like math and how much they like their math teacher.
- C. There is a positive linear association between how much Sean's classmates like math and how much they like their math teacher.
- D. There is a negative linear association between how much Sean's classmates like math and how much they like their math teacher.

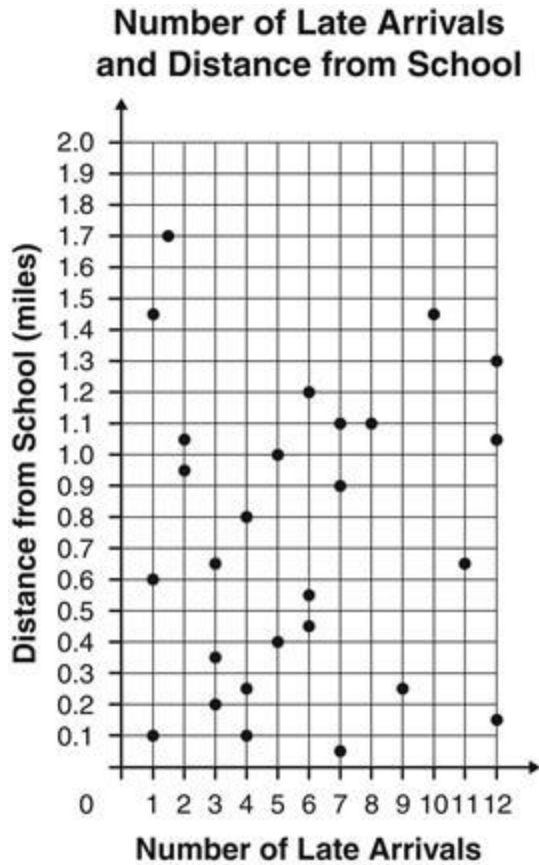
23. The scatterplot below shows the relationship between the high and the low temperatures in Monterey for nine days in May.



Which statement best describes the relationship?

- A. There is a positive correlation.
- B. There is a negative correlation.
- C. The relationship is constant.
- D. There is no relationship.

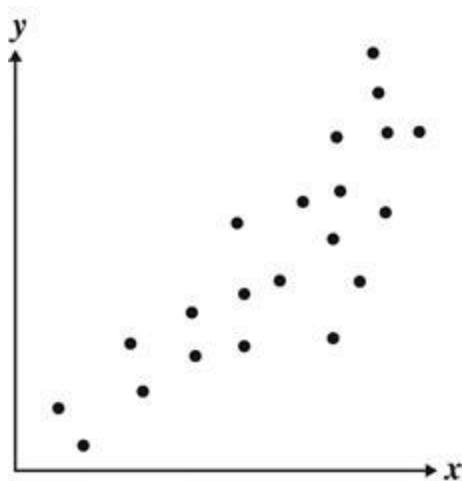
24. A school attendance clerk wants to determine if there is a relationship between the number of times a student arrives to school late and the distance the student lives from the school. The clerk gathered data for the month of October and made the graph shown below.



Which statement best describes the data?

- A. Students who arrived late more than six times live the farthest distances from the school.
- B. Students who arrived late more than six times live the shortest distances from the school.
- C. Students who arrived late more than six times live more than one mile from the school.
- D. There is no clear relationship between the number of times students arrive late and the distances they live from school.

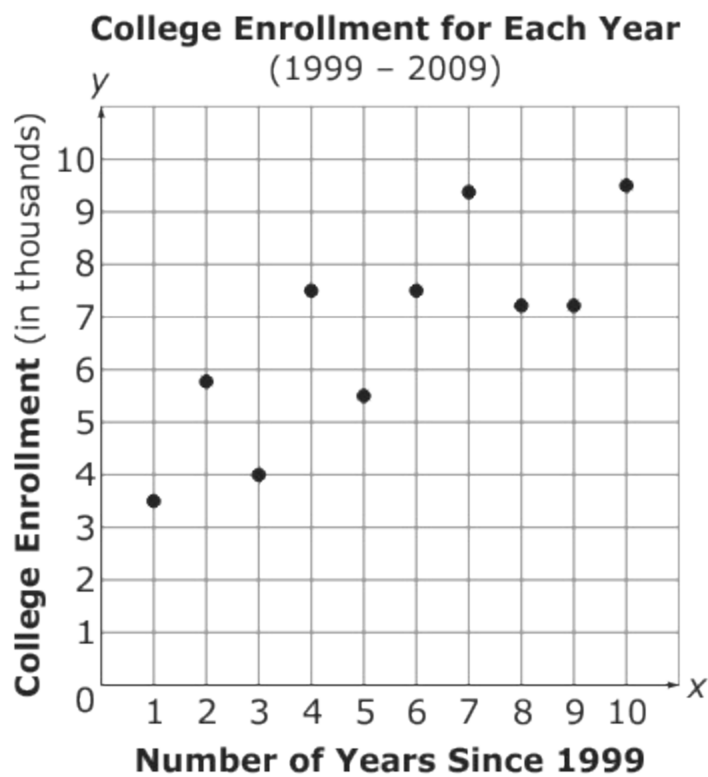
25. Look at the data on the scatterplot below.



Which statement best describes the correlation between x and y ?

- A. low positive
 - B. high positive
 - C. low negative
 - D. high negative
26. When the ages of dog owners are plotted against the weight of their dogs, what type of association would likely be shown?
- A. none
 - B. varied
 - C. negative
 - D. positive

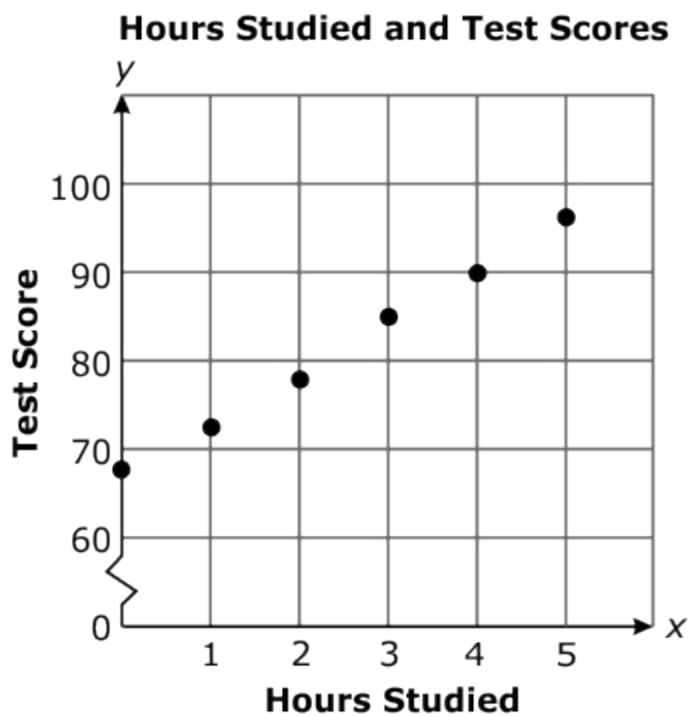
27. The graph shows the enrollment for a local college over a ten-year period.



Which equation would **best** fit the data?

- A. $y = 3,000x + 100$
- B. $y = 800x + 3,000$
- C. $y = 100x + 3,000$
- D. $y = 5x + 3$

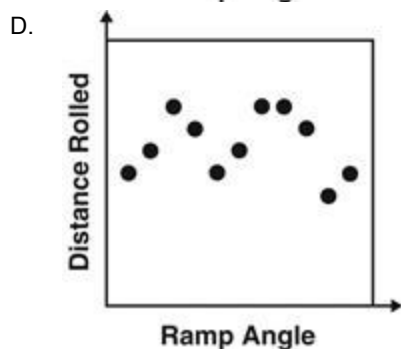
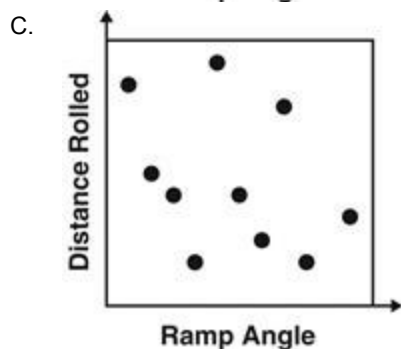
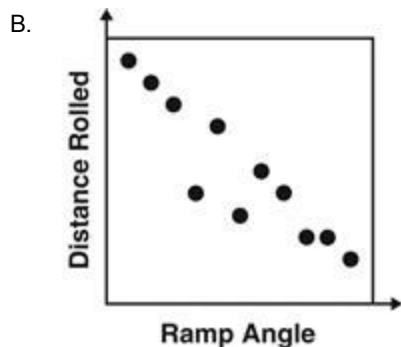
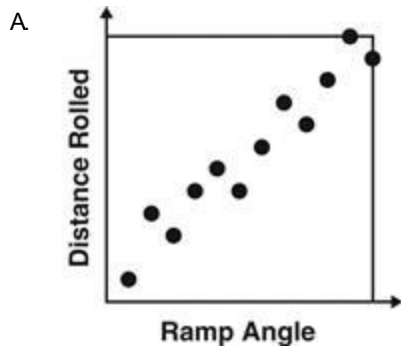
28. The graph below shows students' scores on a math test and the number of hours they studied for the test.



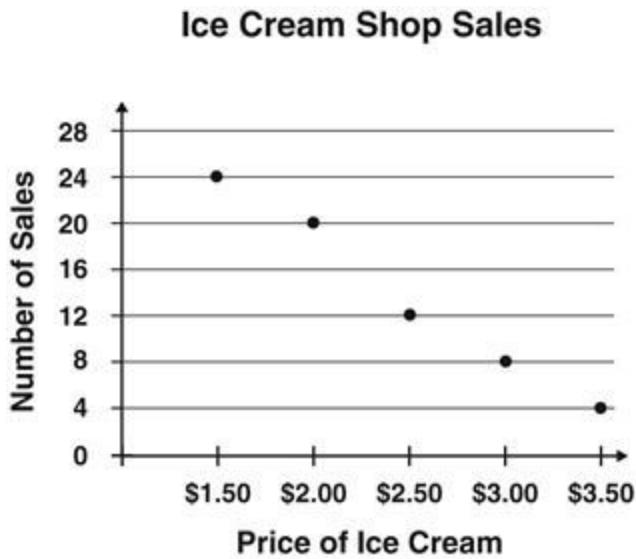
Which equation would **best** fit the data?

- A. $y = 6x + 67$
- B. $y = \frac{1}{6}x + 67$
- C. $y = -6x + 67$

29. Mr. Thompson's science class experimented by rolling toy cars down a ramp and measuring the distance they rolled. The class found that the steeper the angle of the ramp, the farther the cars rolled. Which of the scatterplots below shows this relationship?

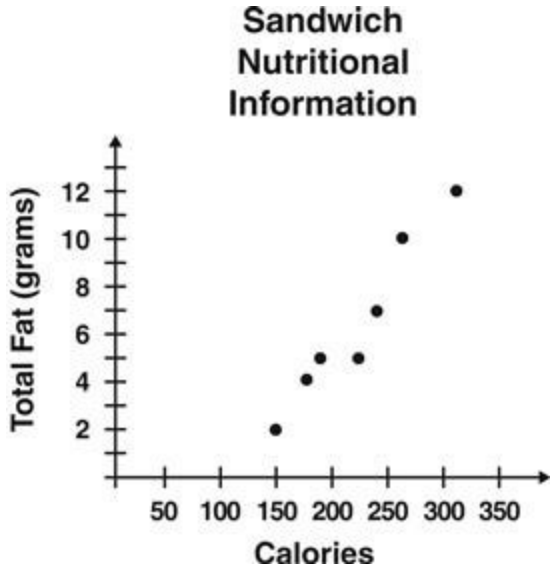


30. The graph shows the sales at an ice cream shop.



Which statement is supported by the data in the graph?

- A. Lower priced items have higher numbers of sales.
 - B. Higher priced items have higher numbers of sales.
 - C. Customers will not pay more than \$3.50 for ice cream.
 - D. The price does not affect the number of sales of ice cream products.
31. The graph below shows the relationship between the number of calories and the total amount of fat in different types of sandwiches.

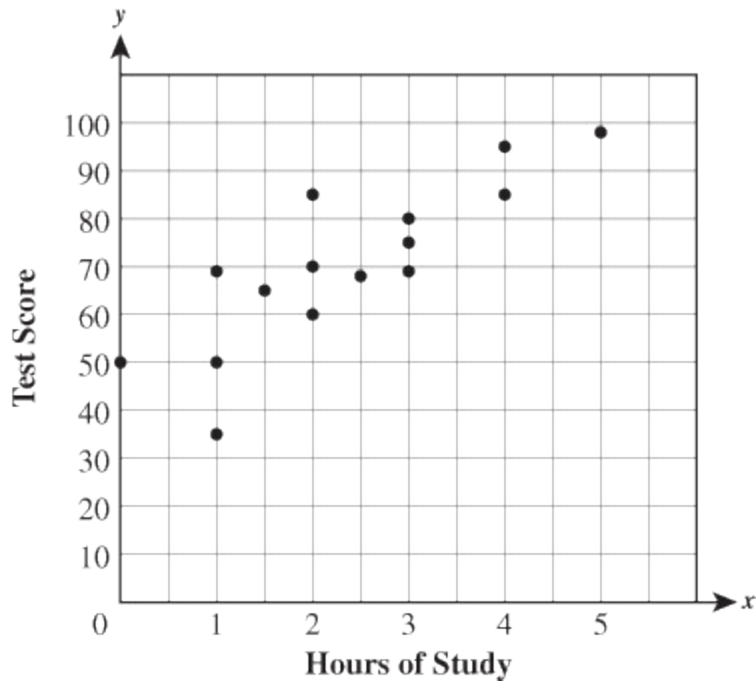


Which trend best describes the relationship in the graph?

- A. The points have a positive trend and are nonlinear.
- B. The points have a negative trend and are nonlinear.
- C. The points have a positive trend and are mostly linear.
- D. The points have a negative trend and are mostly linear.

32. Each point on the scatter plot below represents the number of hours a student studied for a test and the student's test scores.

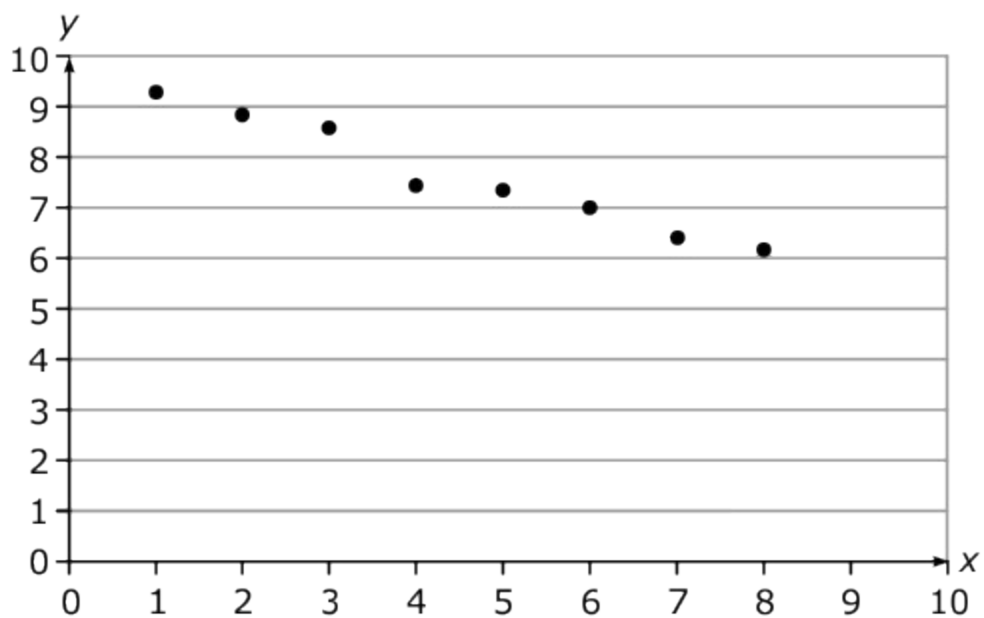
**STUDENTS' TEST SCORES
AND HOURS OF STUDY**



Which equation is the closest approximation to the line of best fit?

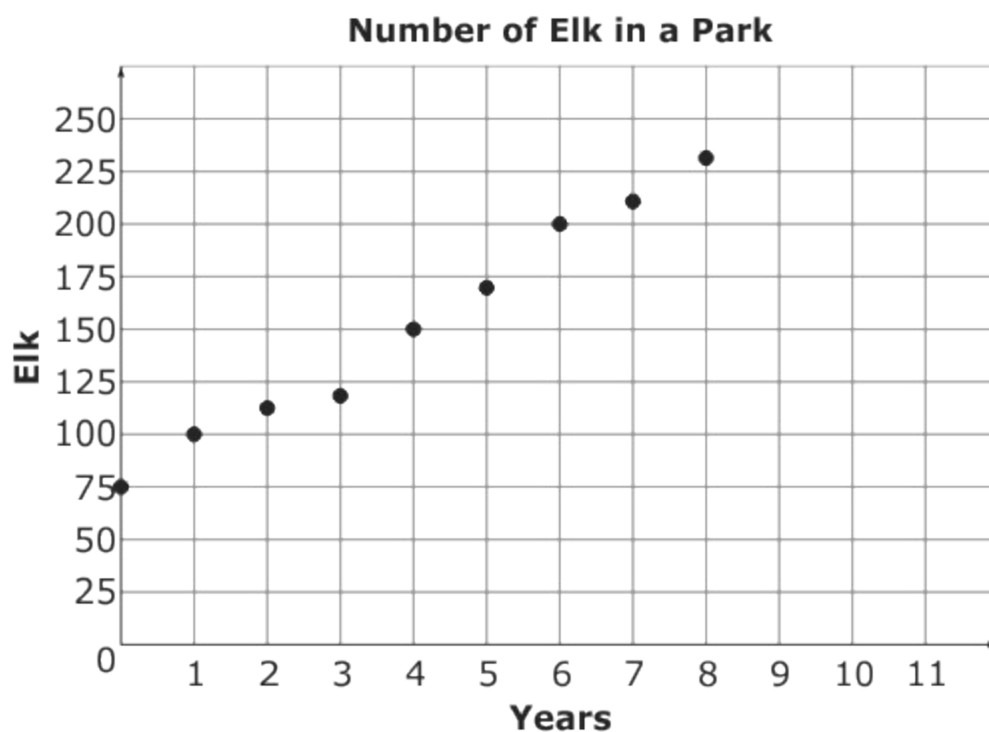
- A. $y = -10x + 92$
- B. $y = 6x + 59$
- C. $y = 10x + 45$
- D. $y = 15x + 30$

33. Which equation **best** fits the data in the scatterplot below?



- A. $y = -2x + 10$
- B. $y = -\frac{1}{2}x + 10$
- C. $y = 10x - 2$

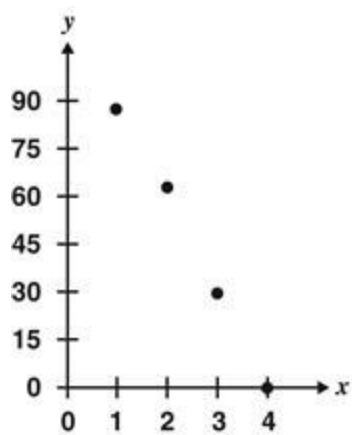
34. The graph shows the number of elk in a national park over several years.



Which equation **best** fits the data?

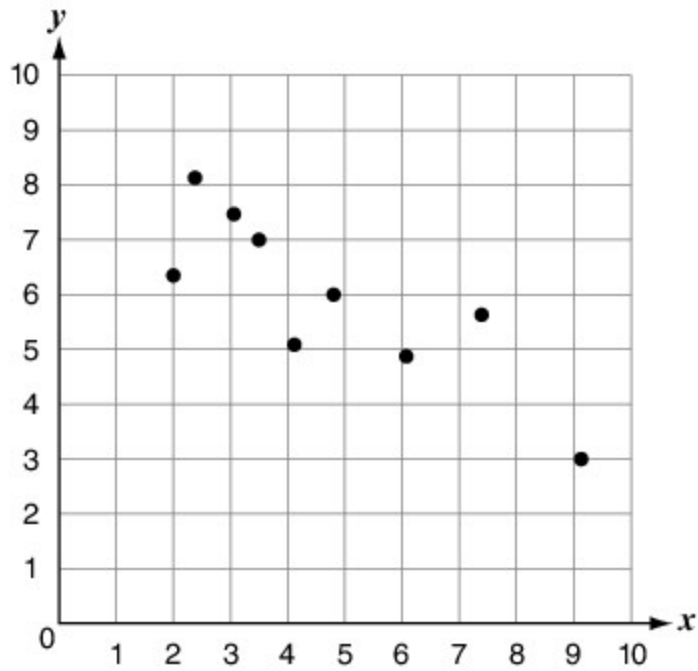
- A. $y = 75 + 20x$
- B. $y = 75 + 40x$
- C. $y = 75 - 20x$
- D. $y = 75 - 40x$

35. Which equation represents the line of best fit for the data?



- A. $y = 30x$
- B. $y = -30x + 120$
- C. $y = 30x + 60$
- D. $y = -30x + 90$

36. The figure below shows a scatter plot.



Which linear equation **best** represents the data in the scatter plot?

- A. $y = -8x + 0.5$
- B. $y = -0.5x - 8$
- C. $y = -0.5x + 8$
- D. $y = -x + 8.5$