

TEST NAME: 8 Math Scatterplots V1
TEST ID: 39407
GRADE: 08
SUBJECT: Mathematics
TEST CATEGORY: My Classroom (Individual Teacher Assessments)

04/12/16, 8 Math Scatterplots V1

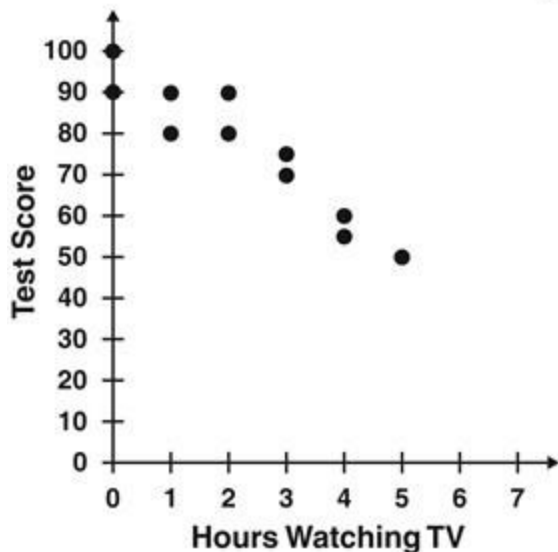
Student: _____

Class: _____

Date: _____

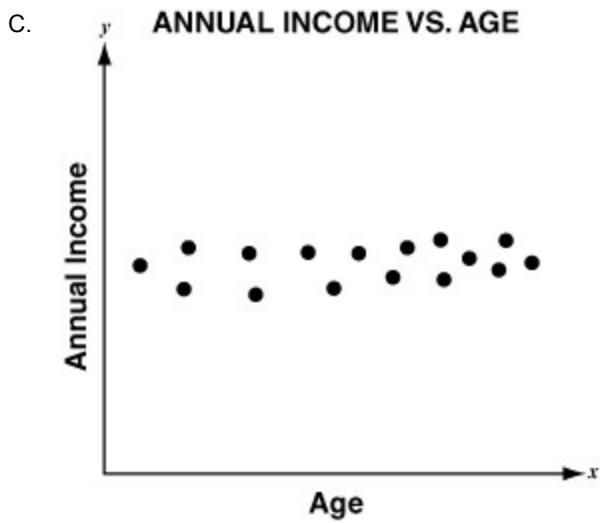
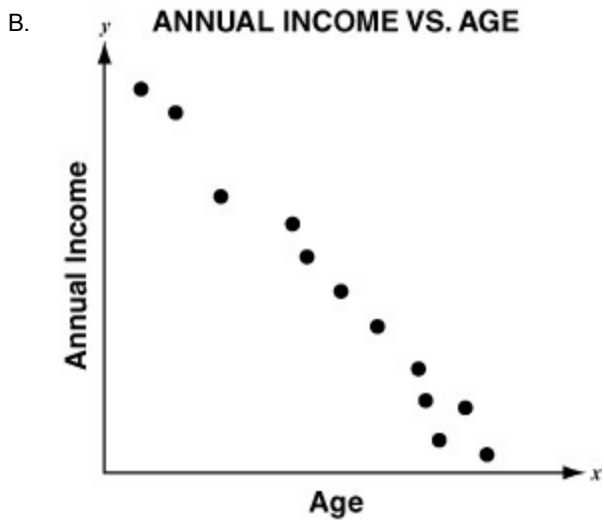
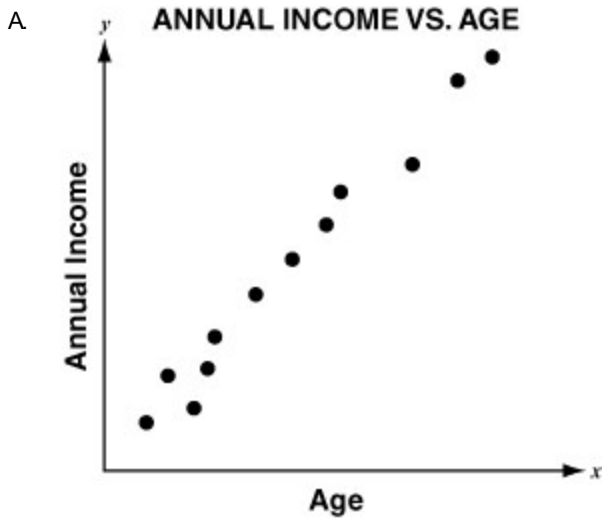
1. The scatterplot below shows the relationship between the number of hours spent watching television the day before a test and the test scores earned by a group of students.

Test Scores vs. Hours Watching TV



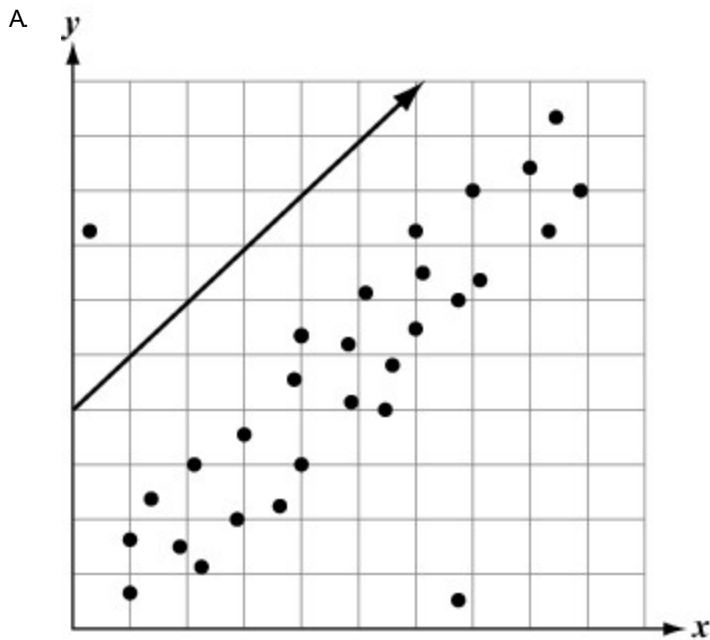
Which equation represents the line of best fit for the scatterplot?

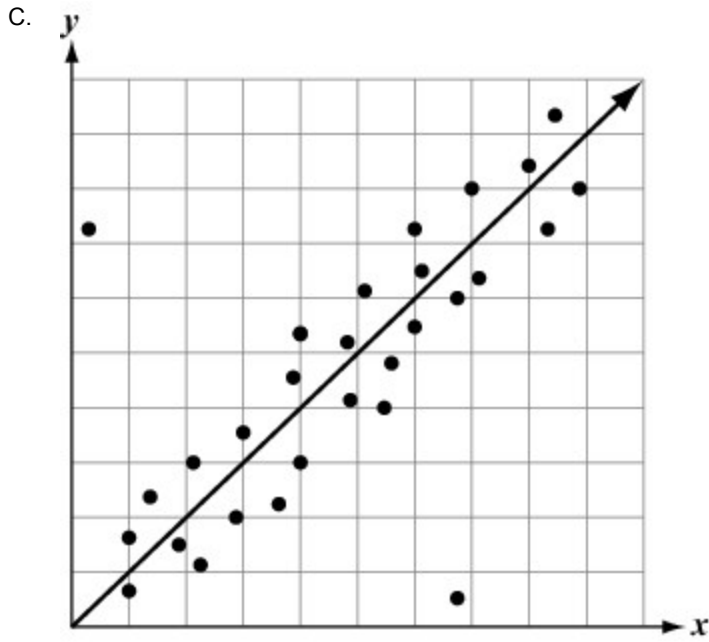
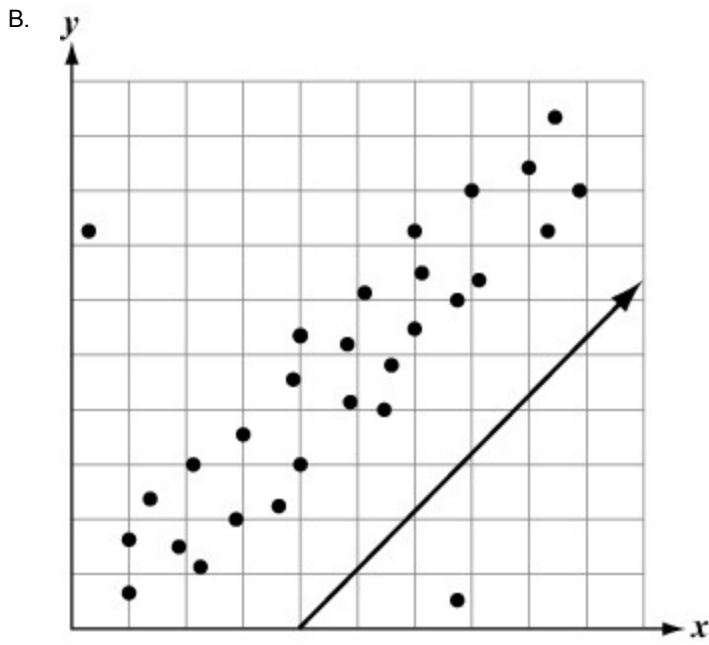
- A. $y = -10x + 50$
B. $y = -10x + 100$
C. $y = 10x - 50$
D. $y = 10x - 100$
2. There is a positive linear correlation between the annual income and the age of a person before retirement. Which scatter plot **best** represents this situation?

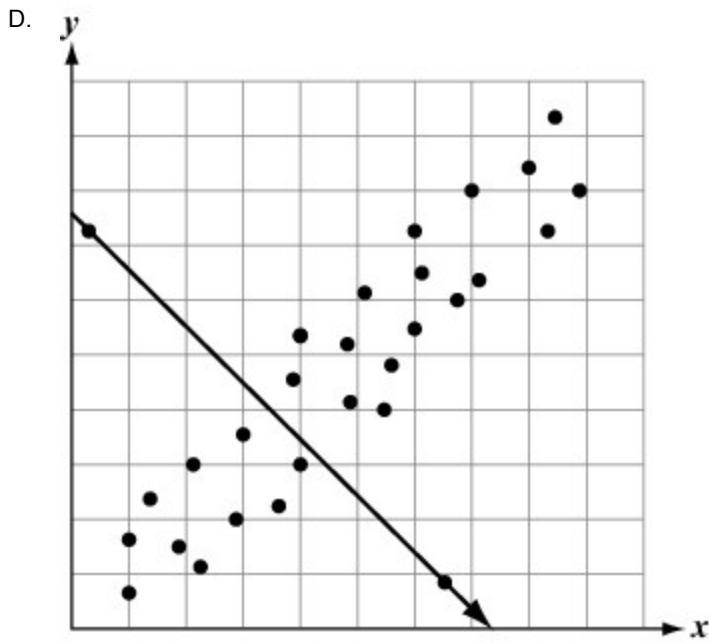




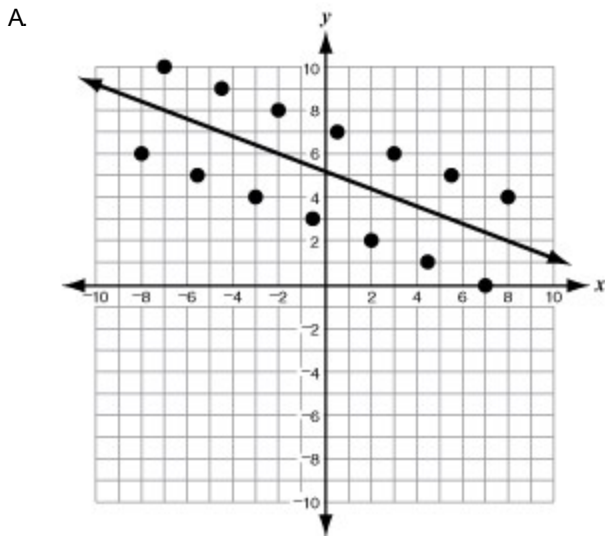
3. Which scatter plot shows the line that **best** fits this data set?



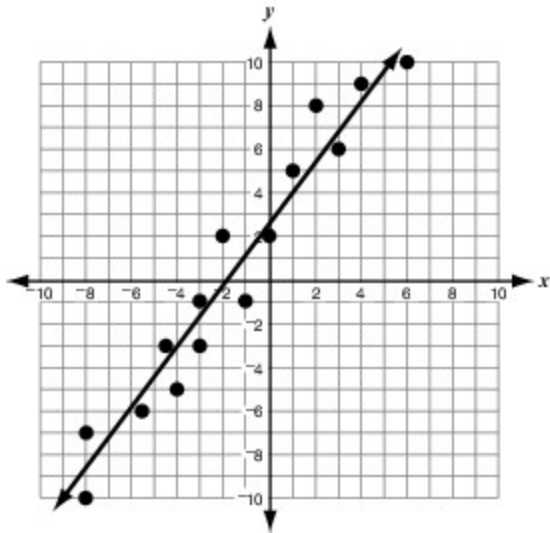




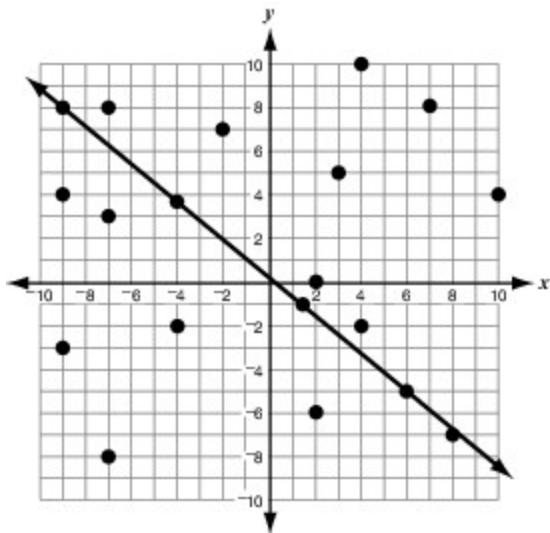
4. Which graph shows the line of best fit that **most** accurately models the relationship between the two variables?



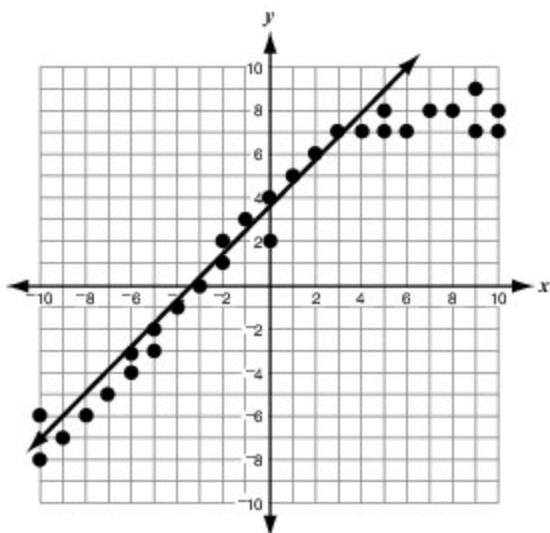
B.



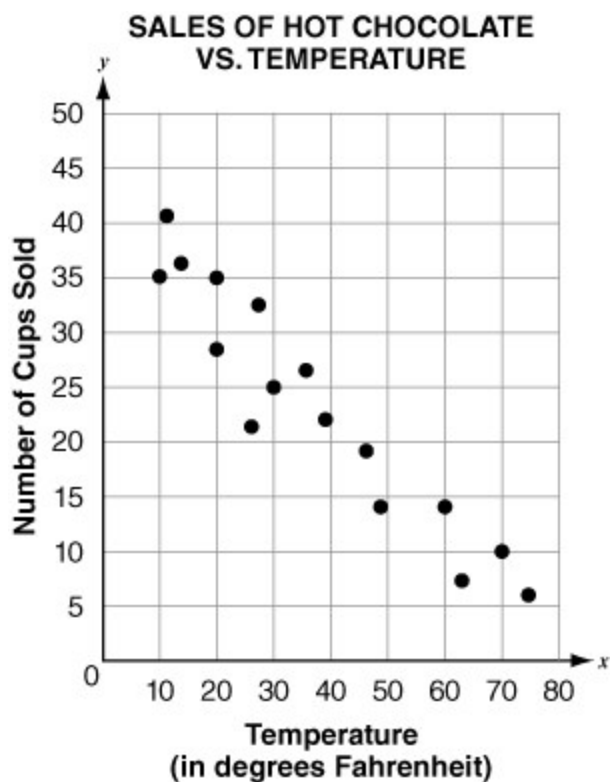
C.



D.



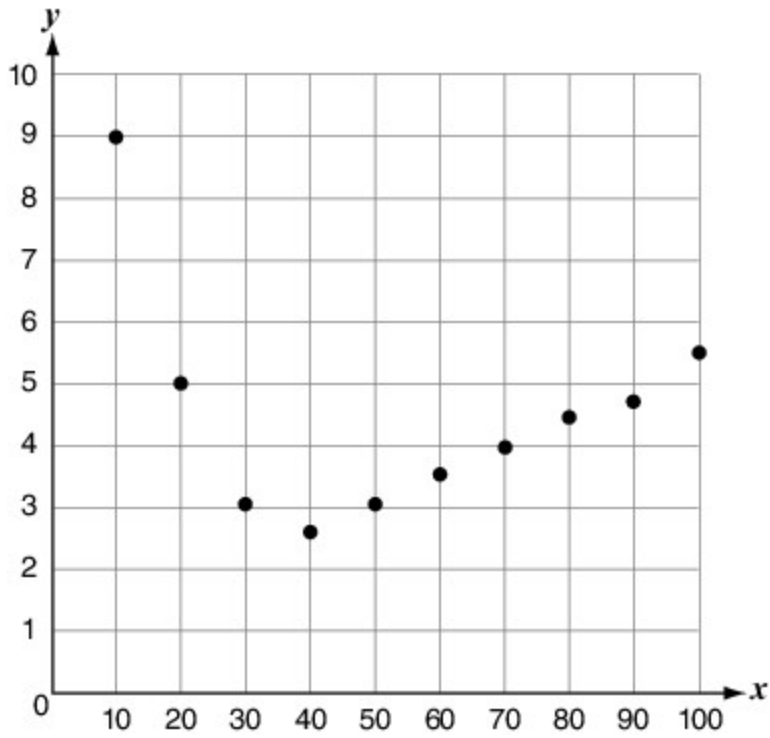
5. The number of cups, y , of hot chocolate sold at a concession stand at various temperatures, x , is shown below.



Which pattern of association **best** describes the relationship between the number of cups of hot chocolate sold and the temperature?

- A. Nonlinear
- B. Positive linear
- C. Negative linear
- D. No association

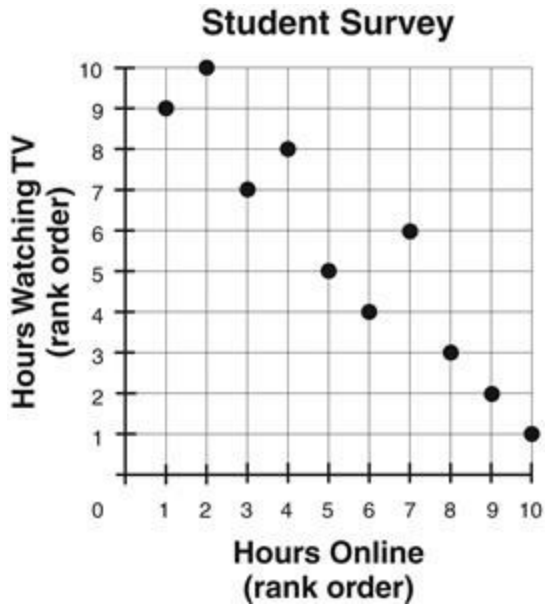
6. Use the graph to answer the question below.



Which value of x is an outlier?

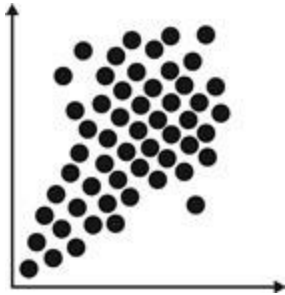
- A. $x = 9$
- B. $x = 10$
- C. $x = 40$
- D. $x = 100$

7. Mr. Vail surveyed 10 of his students to find the amounts of time they spent watching television (TV) and the amounts of time they spent online last week. For each activity, he ranked the students using the numbers 1 to 10 to represent the rank order from least amount of time to greatest amount of time spent on the activity. The scatter plot below shows Mr. Vail's results.



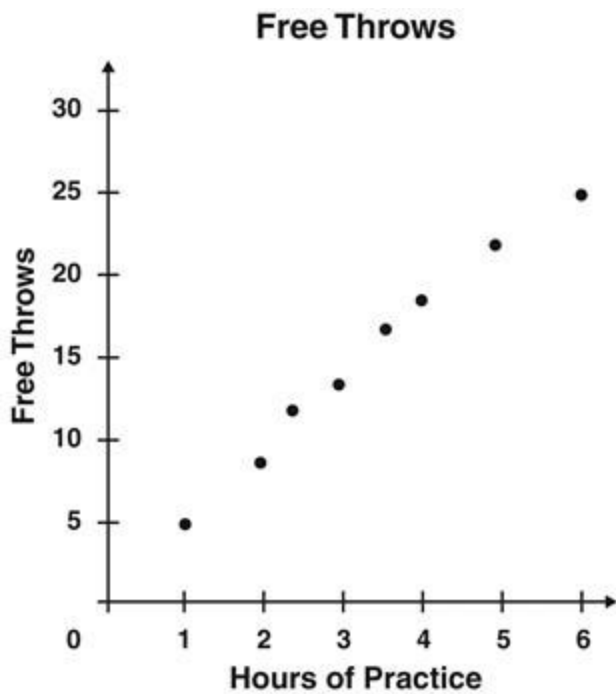
Which statement best describes the relationship represented by the scatterplot?

- A. No student had the same ranking for online hours and television hours.
 - B. There is no correlation between the hours spent online and the hours spent watching TV.
 - C. There is a positive correlation between the hours spent online and the hours spent watching TV.
 - D. There is a negative correlation between the hours spent online and the hours spent watching TV.
8. The scatterplot below suggests which of the following types of data relationship?



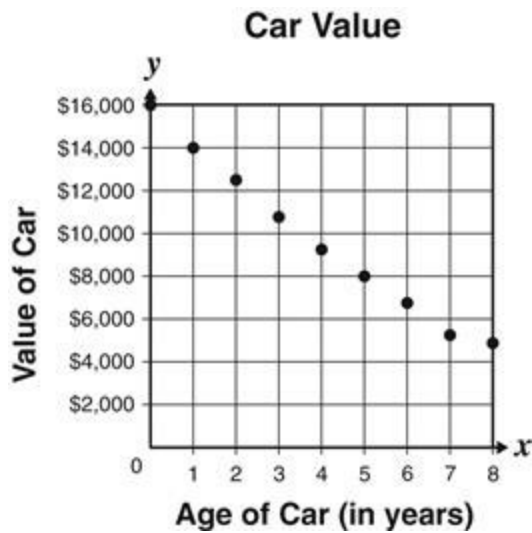
- A. weak negative correlation
- B. weak positive correlation
- C. strong negative correlation
- D. strong positive correlation

9. What type of correlation is shown in this graph?



- A. Weak negative correlation
- B. Strong negative correlation
- C. Weak positive correlation
- D. Strong positive correlation

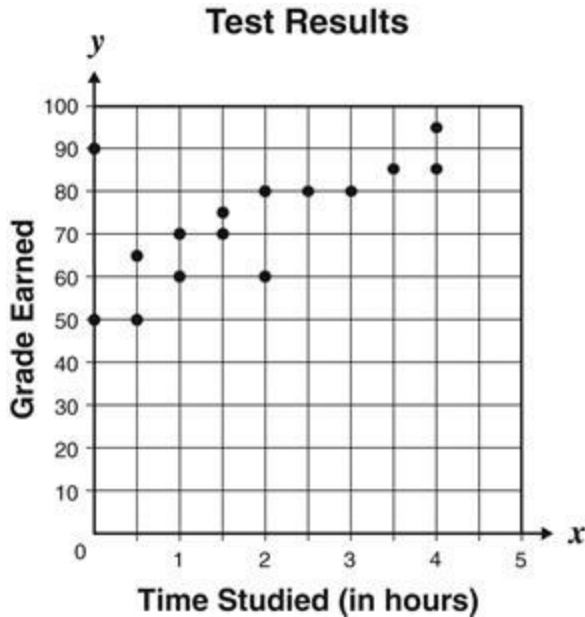
10. The graph shows the value of a car at the time of purchase and after each of the next 8 years.



According to the graph, which statement is true?

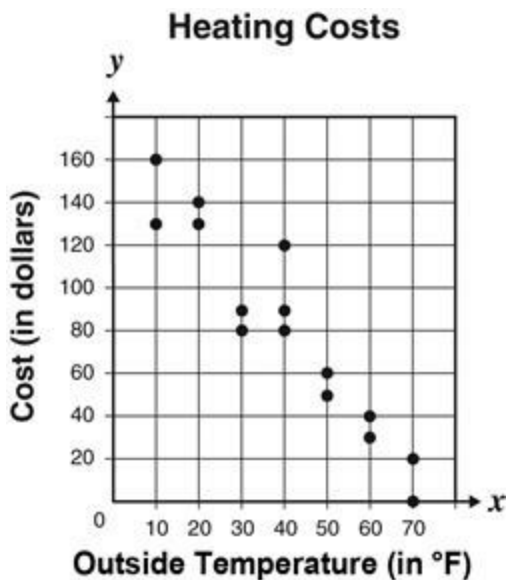
- A. The value of the car decreased at the same rate each year.
- B. As the age of the car increased, the value of the car decreased.
- C. As the age of the car increased, the value of the car did not change.
- D. The value of the car decreased \$2,000 after the first year, so the value after 8 years should be \$0.

11. This scatterplot shows the length of time 15 students studied for a test and the grades they earned.



Which statement best describes the data?

- A. There is no correlation between the hours studied and grades earned.
 - B. There is a positive correlation between the hours studied and grades earned.
 - C. There is a constant correlation between the hours studied and grades earned.
 - D. There is a negative correlation between the hours studied and grades earned.
12. Home heating costs and outside temperatures for 15 families are shown in the scatterplot below.



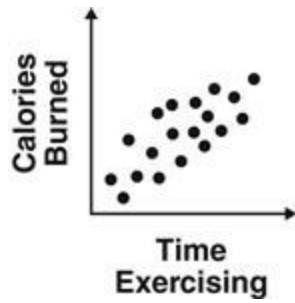
Which statement best describes these data?

- A. There is no correlation between the outside temperature and the heating cost.
- B. There is a positive correlation between the outside temperature and the heating cost.
- C. There is a constant correlation between the outside temperature and the heating cost.
- D. There is a negative correlation between the outside temperature and the heating cost.

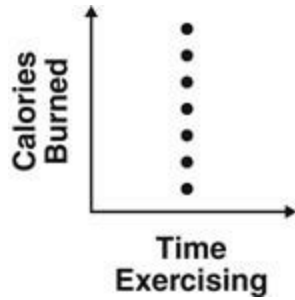
13. Which graph best illustrates this statement?

The more time spent exercising, the more calories burned.

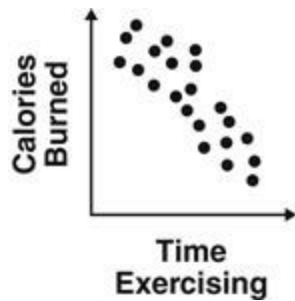
A.



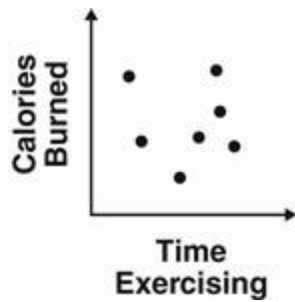
B.



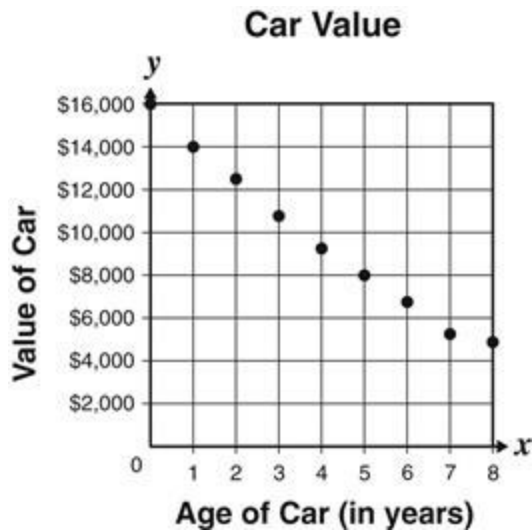
C.



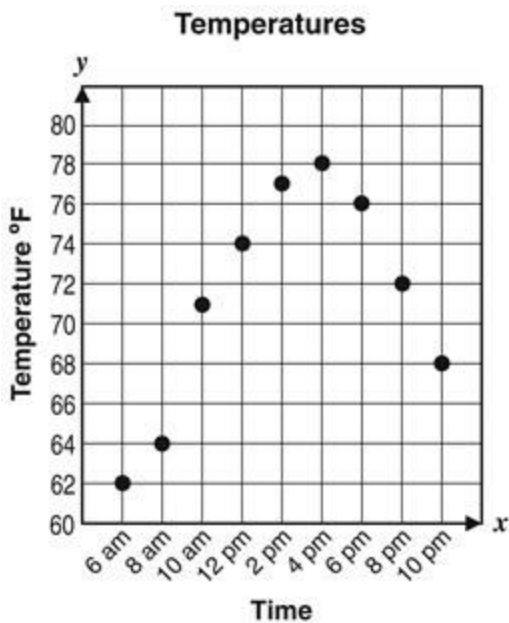
D.



14. Based on the data collected, which statement best describes the relationship between the value of the car and the age of the car?



- A. As the age of the car increases, the value of the car increases.
B. As the age of the car increases, the value of the car decreases.
C. As the age of the car increases, the value of the car is not affected.
D. As the age of the car increases, the value of the car remains constant.
15. Jeremiah measured the temperature at various times during the day. He recorded the results on the graph shown.



According to this graph, what was the temperature at 6:00 p.m.?

- A. 62°F
B. 72°F
C. 76°F
D. 78°F

16. 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.
17. A man used a faucet to add water to a pond. The man used the equation $v = 3,208m + 6,000$ to determine the volume, v , of the pond in milliliters after he had added water for m minutes. What is the meaning of the y -intercept of this equation?
- A. The volume of the pond increases by 3,028 milliliters each minute.
 - B. The volume of the pond increases by 6,000 milliliters each minute.
 - C. The volume of the pond was 3,028 milliliters before the water was added.
 - D. The volume of the pond was 6,000 milliliters before the water was added.
18. A scientist recorded the weight of an insect from hatching to maturity. The equation $w = 0.7a + 1.2$ gives the insect's weight, w , in grams at age a , in weeks. What is the meaning of the slope of this equation?
- A. The weight of the insect increases 1.2 grams each week.
 - B. The weight of the insect increases 0.7 grams each week.
 - C. The weight of the insect is 1.2 grams when it hatches.
 - D. The weight of the insect is 0.7 grams when it hatches.

19. When t is the time in hours, the equation $d = 2t + 8$ gives the total accumulated snow depth, d , in inches during a storm. Using this equation, how much snow will be added with each hour?
- A. 1 inch
 - B. 2 inches
 - C. 8 inches
 - D. 10 inches
20. Hillary measured the depth of the snow in her front yard for 7 days. An equation for the line of best fit for Hillary's data is $y = -0.5x + 8$. Let x represent the number of days. Let y represent the depth of the snow in inches.
- Which statement best describes the meaning of the slope in this equation?
- A. The depth of the snow decreased 0.5 inch per day.
 - B. The depth of the snow increased 0.5 inch per day.
 - C. The depth of the snow decreased 8 inches per day.
 - D. The depth of the snow increased 8 inches per day.
21. A college student is using the following model to determine the total number of text messages she will have in the inbox in her cell phone, if she does not delete any of the current messages or future messages she receives in the next x days. In the model, y represents the total number of text messages in her inbox after x days.

$$y = 180 + 84x$$

What does 180 represent in the model?

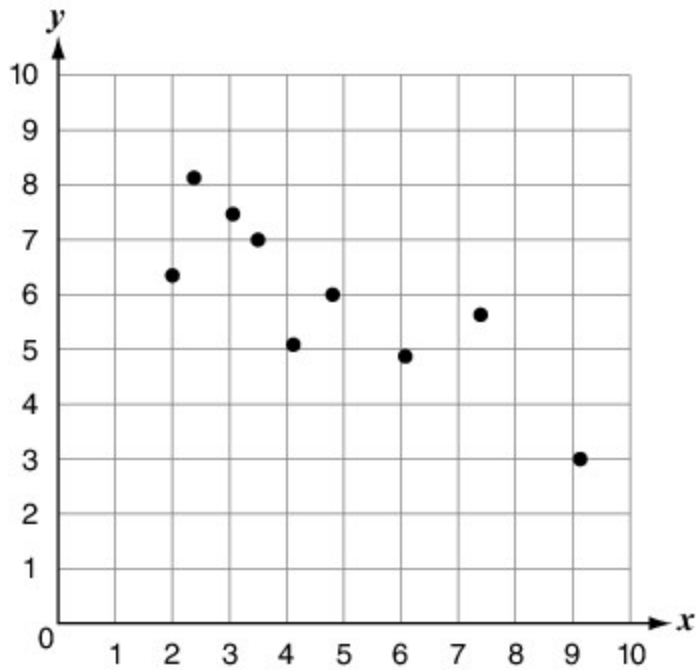
- A. The current number of text messages on her phone.
- B. The maximum number of text messages she can receive in a day.
- C. The number of text messages she predicts she will receive per day.
- D. The number of text messages she predicts she will receive in 3 months.

22. A student had already read some pages in a book when he created the model below. The model tracks p , the total amount of pages read if the student reads for h hours.

$$p = 30h + 60$$

Which statement **best** explains the meaning of the slope in this model?

- A. The student tends to read 30 pages per hour.
 - B. The student tends to read 60 pages per hour.
 - C. The student will have 30 pages left to read after 1 hour of reading.
 - D. The student will have 60 pages left to read after half an hour of reading.
23. The figure below shows a scatter plot.

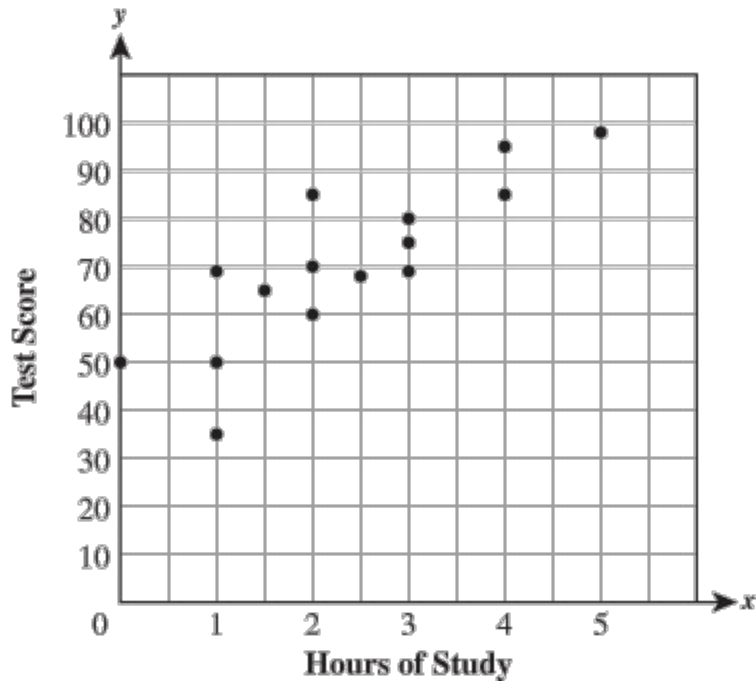


Which linear equation **best** represents the data in the scatter plot?

- A. $y = -8x + \frac{1}{2}$
- B. $y = -\frac{1}{2}x - 8$
- C. $y = -\frac{1}{2}x + 8$
- D. $y = x + 9$

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

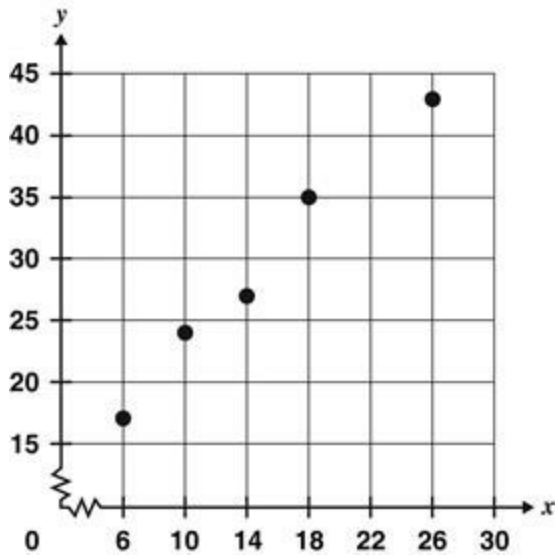
**STUDENTS' TEST SCORES
AND HOURS OF STUDY**



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

- A. $y = -10x + 90$
- B. $y = 6x + 60$
- C. $y = 10x + 45$
- D. $y = 15x + 20$

25. A scatterplot showing a relationship between x and y is shown below.



Which equation represents the line of best fit for the graph?

- A. $y = x + 5$
- B. $y = x - 5$
- C. $y = x + 15$
- D. $y = 2x - 15$