TEST NAME: **SP.1 NEW**
TEST ID: **885875**
GRADE: **08 - Eighth Grade**
SUBJECT: **Mathematics**
TEST CATEGORY: **School Assessment**

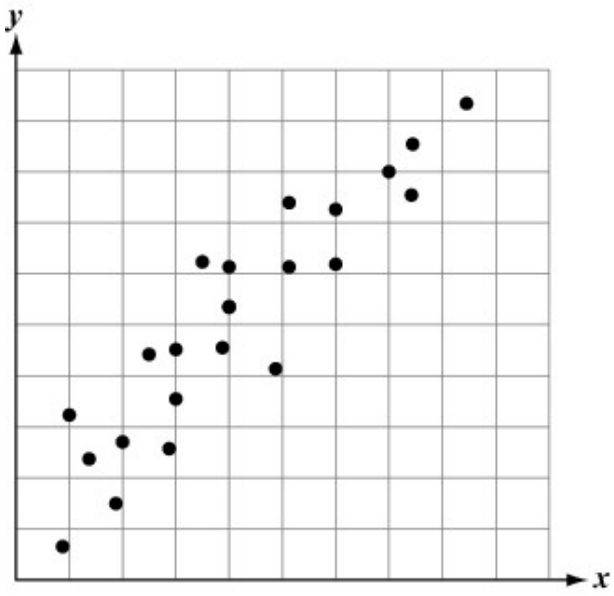
Student: _____

Class: _____

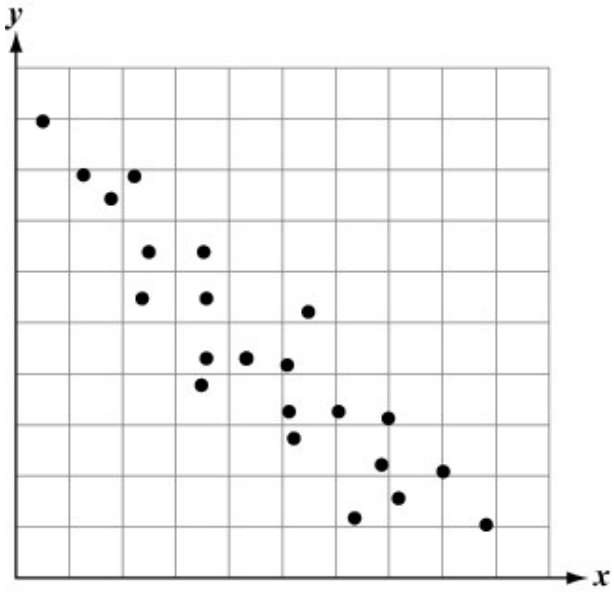
Date: _____

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

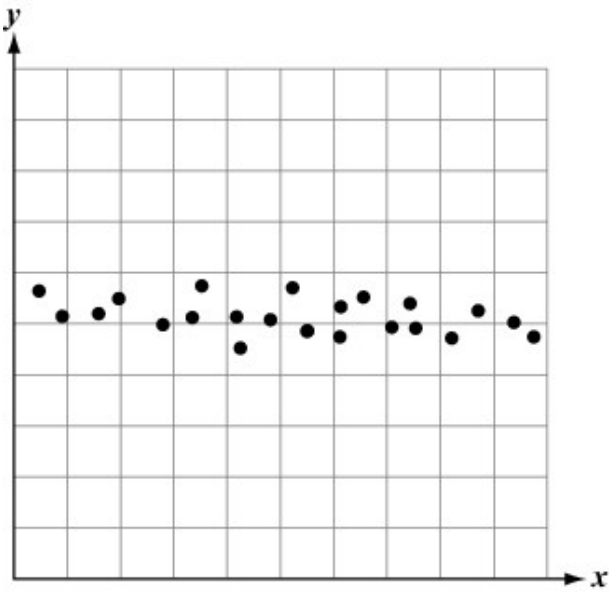
A.



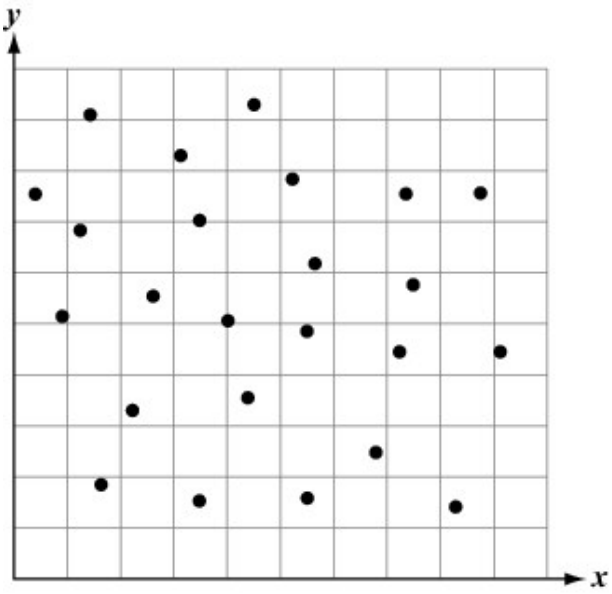
B.



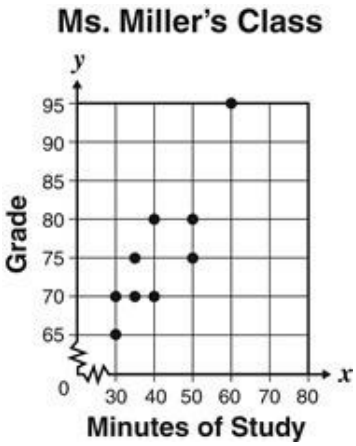
C.



D.



2. **The scatterplot below shows the relationship between the number of minutes a student studied for a test and the grade the student received for the test in Ms. Miller's class.**



Which conclusion is best supported by the data?

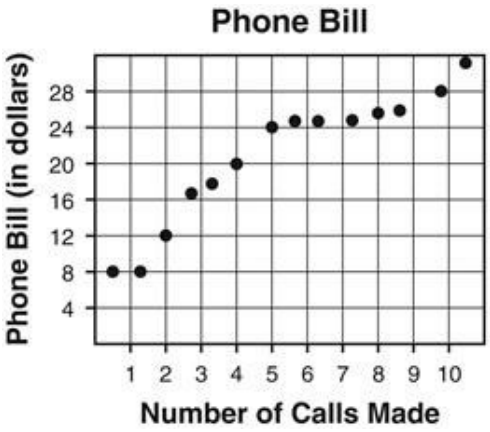
A. A student who studies 80 minutes will receive a grade of 95 on the test.
B. A student who studies 45 minutes will receive a grade of 75 on the test.
C. A student who studied longer always did better than a student who studied less.
D. A student who studied longer generally did better than a student who studied less.

3. What type of association is shown in the data below?

x	*y*
1	2
3	8
5	10
7	3
9	1

A. positive
B. negative
C. none

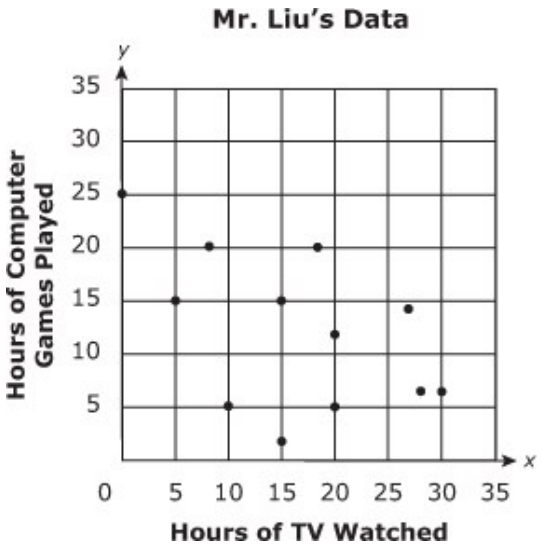
4. **The scatterplot below shows the relationship between the number of calls made and the amount of a phone bill.**



Which conclusion is most strongly supported by the data?

A. No one made more than 8 phone calls.
B. Six people made at least 12 phone calls.
C. There is a negative correlation between the number of calls made and the amount of the phone bill.
D. There is a positive correlation between the number of calls made and the amount of the phone bill.

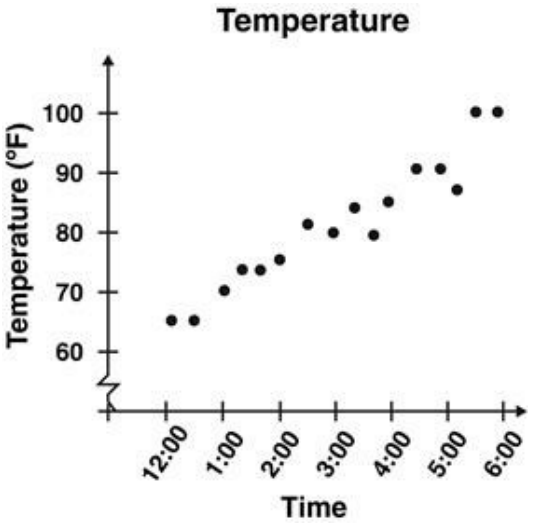
5. The scatter plot shows the number of hours Mr. Liu's students spent watching TV compared to the number of hours they spent playing computer games during a week.



Which **best** describes the association between the two quantities?

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

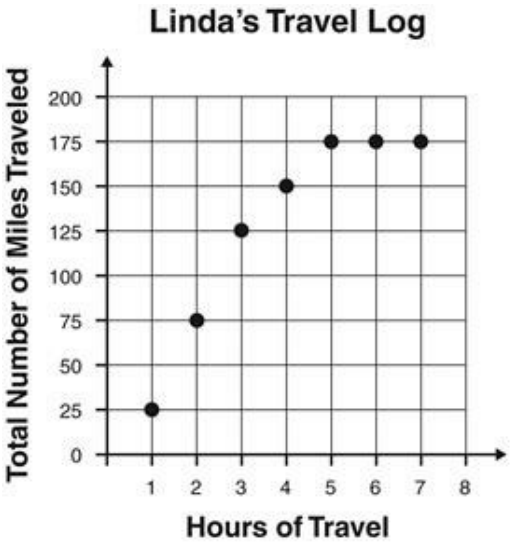
6. **The graph shows the temperature from 12:00 p.m. to 6:00 p.m.**



What type of trend is shown in the graph?

A. positive
B. negative
C. constant
D. No trend is shown in the graph.

7. **Linda kept a record of the number of miles traveled during the course of a family trip. Her data is displayed in the graph below.**



How many miles did Linda's family travel during the third hour of their trip?

A. 50 miles
B. 75 miles
C. 125 miles
D. 150 miles

8. What type of correlation ***most likely*** occurs between a person's age and the number of his or her siblings?

A. positive correlation

B. negative correlation

C. irrational correlation

D. no correlation

9. 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

10. The chart below shows the number of vegetables grown over several days.

Day	1	2	3	4	5	6	7
Number of Vegetables	3	7	10	12	16	19	22

Which statement describes the type of association between these data?

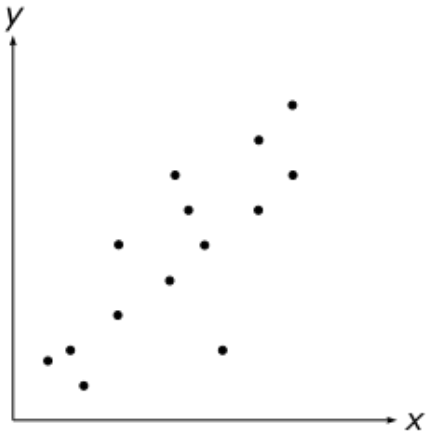
A. The variables have a negative, linear association.

B. The variables have a positive, linear association.

C. The variables have a non-linear association.

D. The variables are unrelated to each other.

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



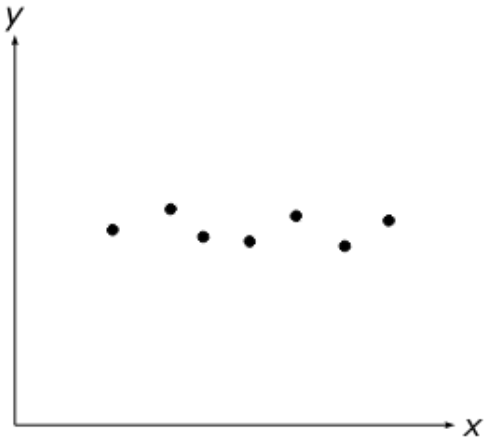
A. positive

B. negative

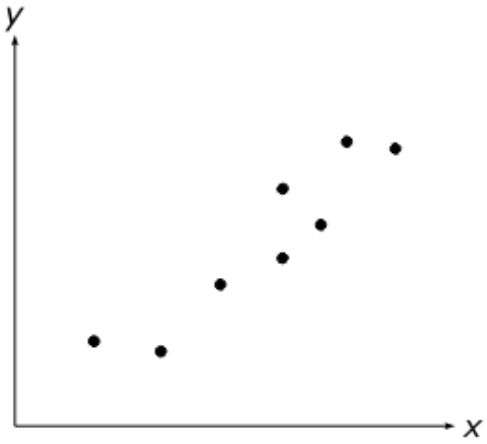
C. none

12. Which scatterplot has a non-linear association?

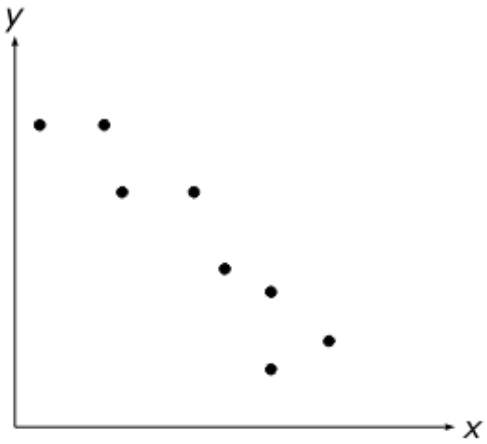
A.



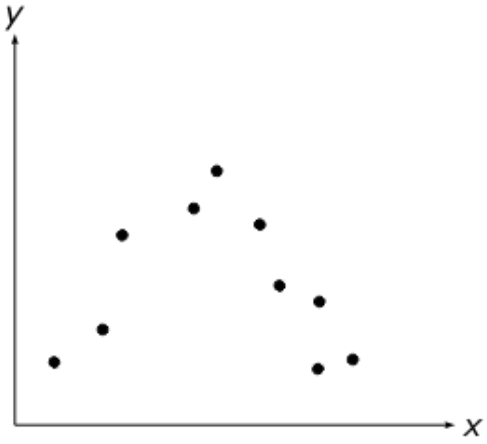
B.



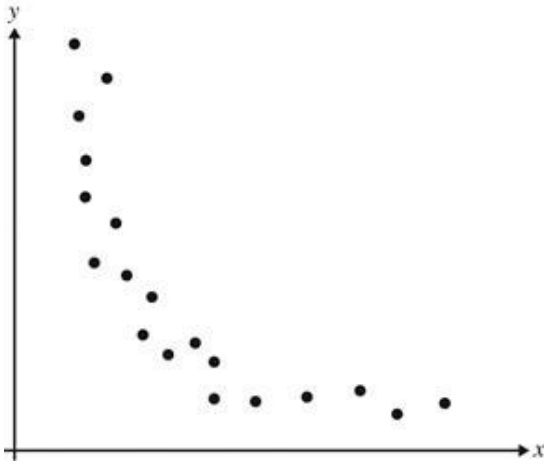
C.



D.



13. **Which is the best description of the data shown on this graph?**

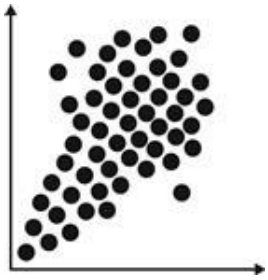


A. nonlinear with a negative trend
B. nonlinear with a positive trend
C. linear with a negative trend
D. linear with a positive trend

14. From a stopped position, a car accelerates to 35 miles per hour on a straight road. The position of the car is graphed on a coordinate plane with time, *x*, and speed, *y*. Which type of association will the graph show?

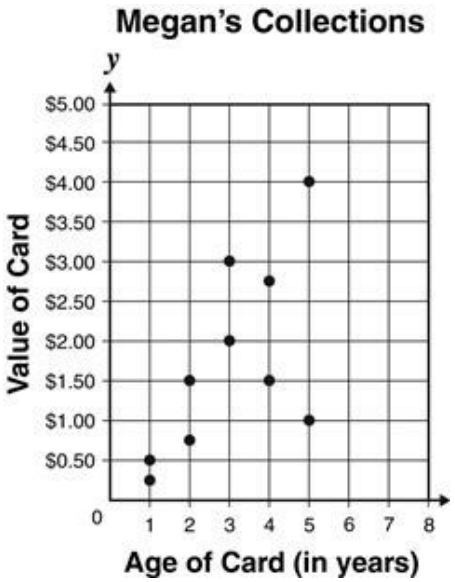
A. positive, linear association
B. negative, linear association
C. non-linear association
D. no association

15. **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

16. **Megan has a baseball card collection containing 10 cards. She graphed the value of these 10 cards on a scatterplot as shown.**



Which conclusion is best supported by the data?

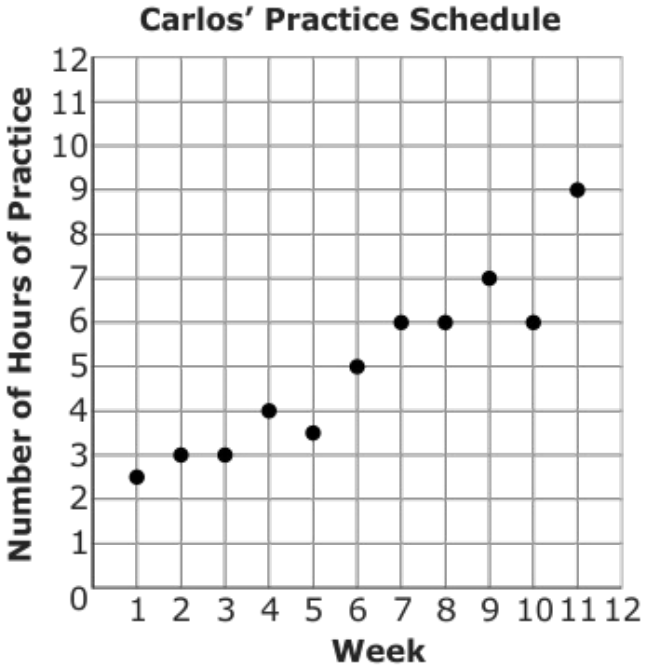
A. A baseball card always increases in value over time.

B. A baseball card generally increases in value over time.

C. If Megan bought a two-year-old baseball card, its value would be about $1.25.

D. If Megan bought an eight-year-old baseball card, its value would be about $5.00.

17. The scatterplot displays the number of hours per week Carlos practiced playing the piano in 12 weeks.



Which describes the association between the weeks and number of hours of practice?

A. positive

B. negative

C. none

18. What type of association is shown in the data below?

x	*y*
12	25
15	20
18	15
21	10

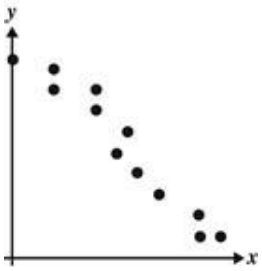
A. positive

B. negative

C. none

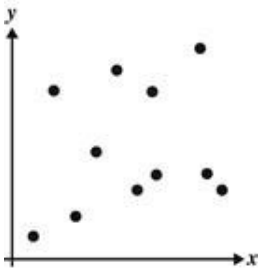
19. **The results of four experiments are shown. Which results appear to show a negative correlation between the two variables?**

A.

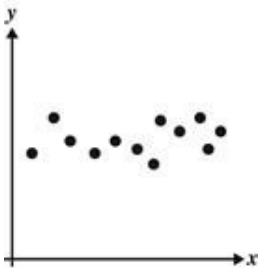


B.

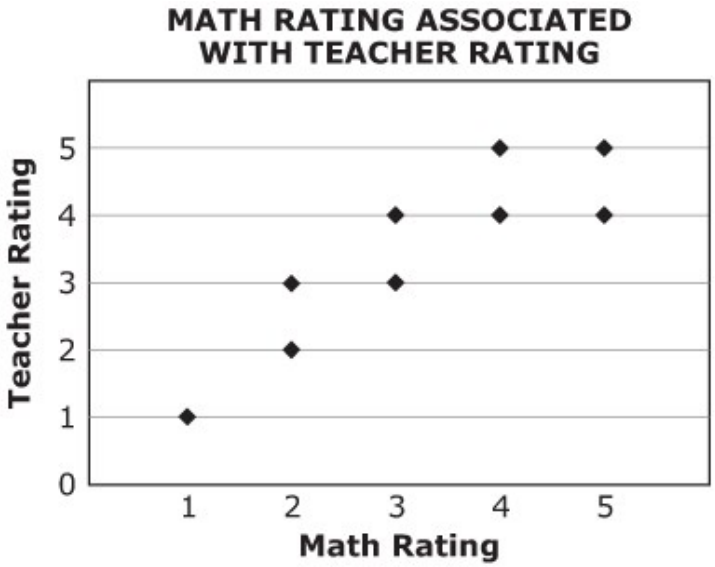
C.



D.



20. 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?

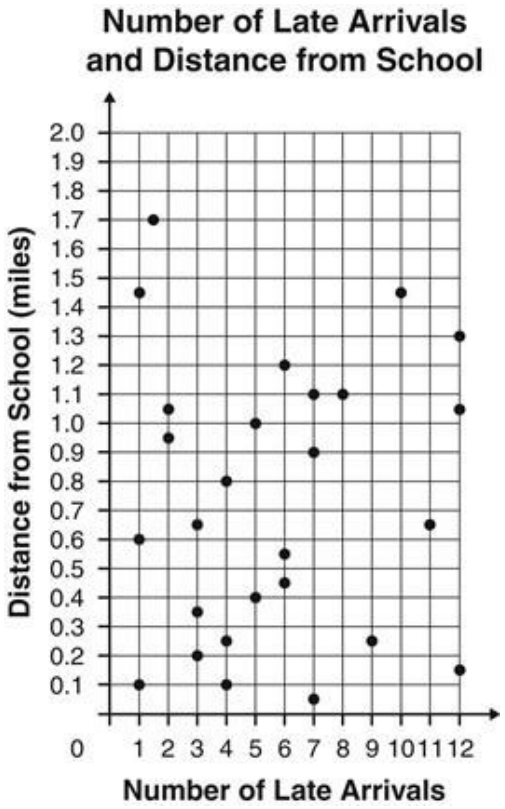
A. There is a cluster of data that shows no relationship between how much Sean's classmates like math and how much they like their math teacher.

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.

21. **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?

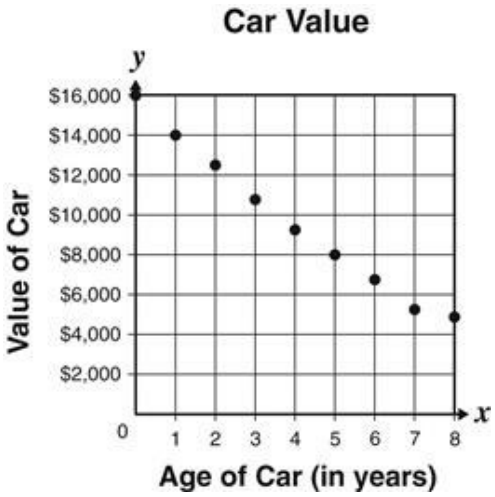
A. Students who arrived late more than six times live the farthest distances from the school.

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.

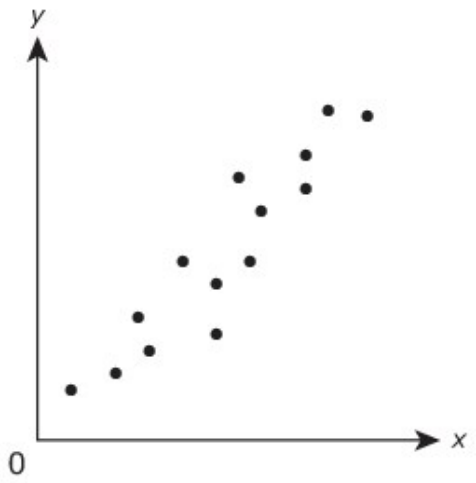
22. **Based on the data collected, which statement best describes the relationship between the value of the car and the age of the car?**



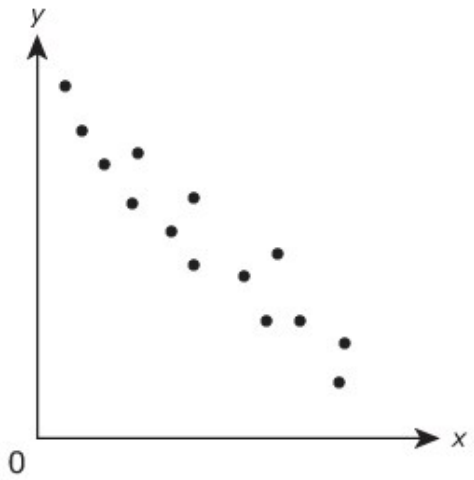
A. As the age of the car increases, the value of the car increases.
B. As the age of the car increases, the value of the car decreases.
C. As the age of the car increases, the value of the car is not affected.
D. As the age of the car increases, the value of the car remains constant.

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

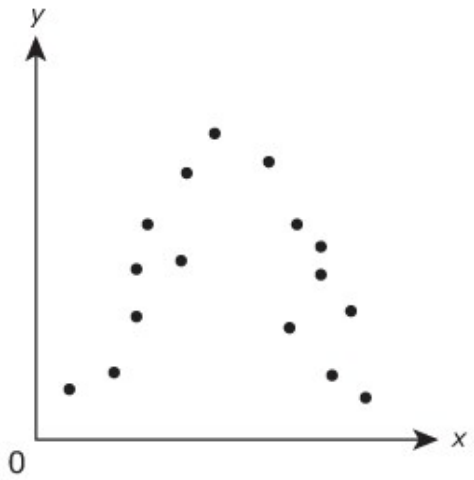
A.



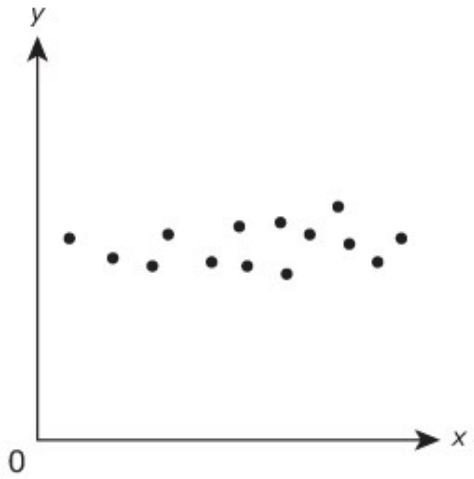
B.



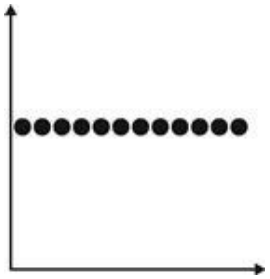
C.



D.



24. **The scatterplot below suggests which of the following types of data relationship?**

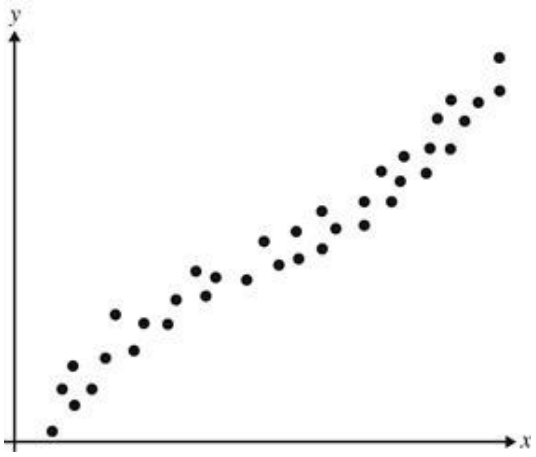


A. zero correlation
B. strong positive correlation
C. weak positive correlation
D. strong negative correlation

25. When graphed on a scatterplot, which situation would ***most likely*** show a positive correlation?

A. a child's height versus age
B. an adult's height versus age
C. a person's height versus eye color
D. a person's height versus number of pets owned

26. **The scatterplot below shows a relationship.**



Which is the best description of the data in the scatterplot?

A. linear with a positive correlation
B. linear with a negative correlation
C. nonlinear with a positive correlation
D. nonlinear with a negative correlation

27. Kathleen collected the data below.

x	*y*
10	44
15	56
20	78
25	98

When graphed, what type of correlation do these data show?

A. positive

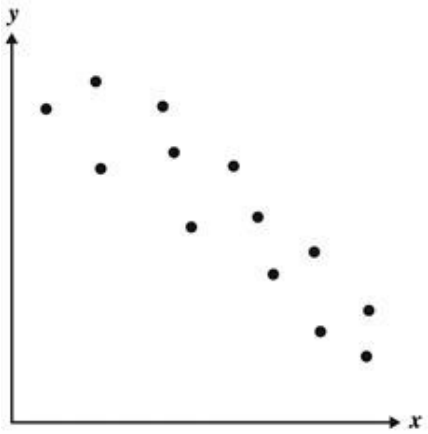
B. negative

C. none

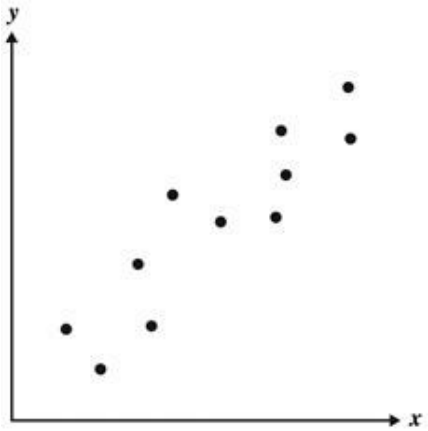
D. irrational

28. **Which graph shows a positive correlation?**

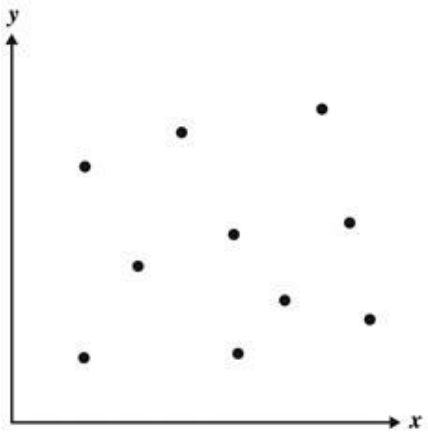
A.



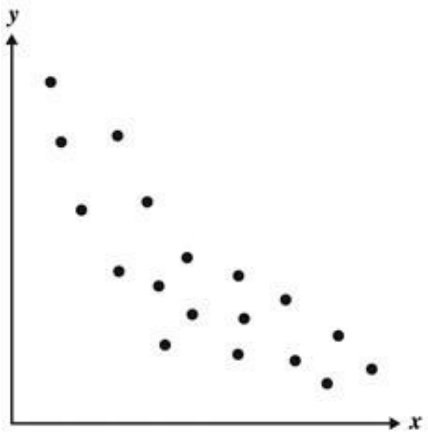
B.



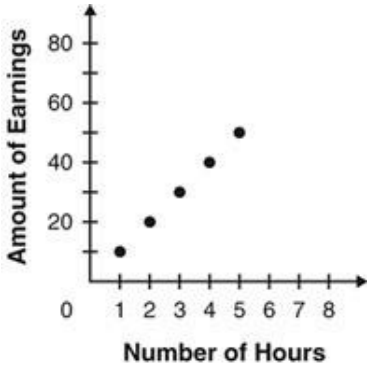
C.



D.



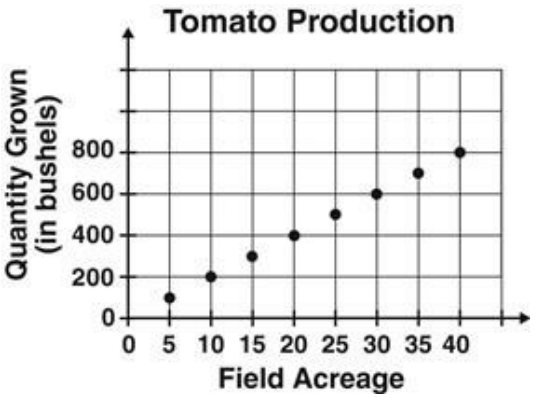
29. **The scatterplot shows the amount Sarah earns for different numbers of hours worked.**



Which statement describes the relationship between her amount of earnings and the number of hours worked?

A. The amount of earnings decreases as the number of hours increase.
B. The amount of earnings increases as the number of hours increase.
C. The amount of earnings stays the same as the number of hours increase.
D. There is no relationship between the amount of earnings and the number of hours.

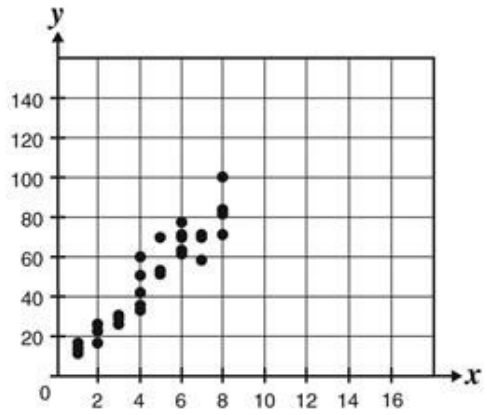
30. **This scatterplot shows the relationship between a tomato field's acreage and the number of bushels of tomatoes grown in one season.**



Based on the scatterplot, what is the best prediction of the number of bushels of tomatoes that can be grown in a 28-acre field?

A. 470
B. 560
C. 620
D. 780

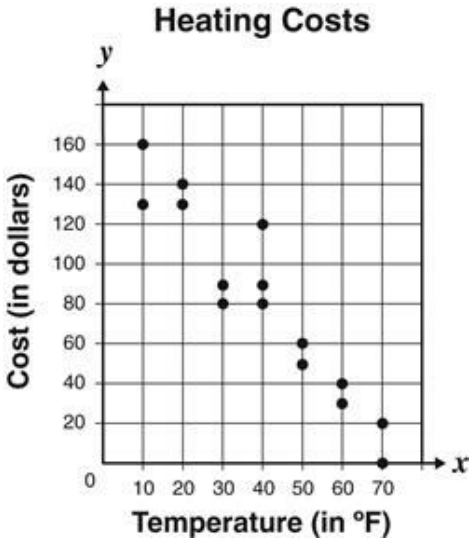
31. **The scatterplot below shows the number of parking lots, *x*, and the number of cars parked, *y*, during the week.**



What is the approximate value of *y* if *x* = 12?

A. 100
B. 110
C. 120
D. 140

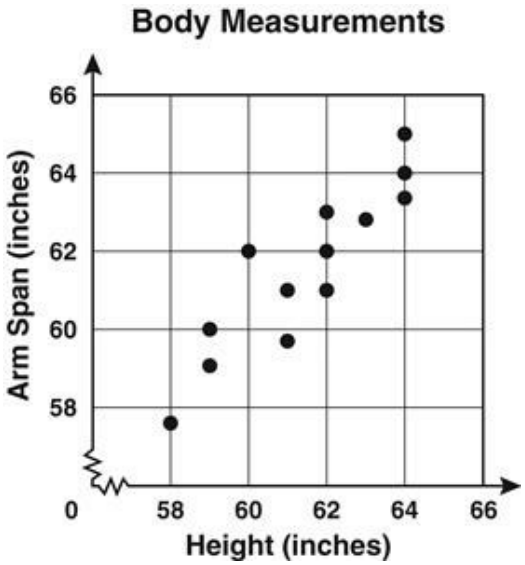
32. **The relationship between average monthly temperatures and the cost of heating 15 homes from October to March is shown in the scatterplot below.**



From the data collected, which statement best represents the relationship between the average monthly temperatures and the cost of heating the homes?

A. As the temperature increased, the cost of heating increased.
B. As the temperature decreased, the cost of heating increased.
C. As the temperature decreased, the cost of heating decreased.
D. As the temperature increased, the cost of heating remained constant.

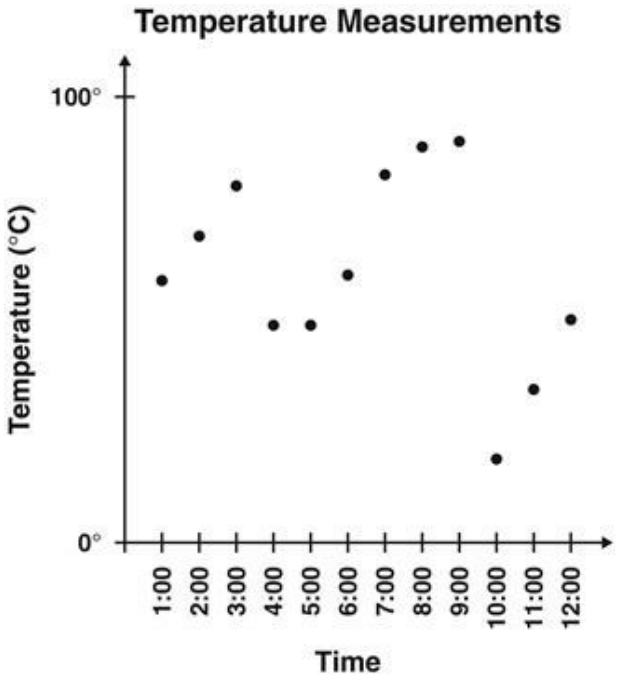
33. **Mr. Larson recorded the heights and arm spans of the students in his science class. The results are shown on the scatterplot.**



Using the scatterplot, which best predicts the arm span of a student who is 57 inches tall?

A. 58 inches
B. 57 inches
C. 55 inches
D. not enough information given

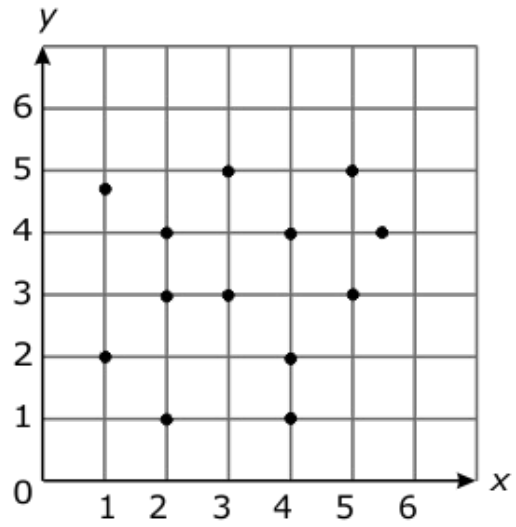
34. **The temperature of a chemical substance was recorded each hour during a 12-hour period, as shown on the scatterplot below. The temperatures on the *y*-axis range from freezing (0°C) to boiling (100°C).**



Based on the data in the plot, which temperature range best represents the recorded temperatures from 3:00 to 6:00?

A. 0°C to 100°C
B. 20°C to 90°C
C. 50°C to 80°C
D. 60°C to 70°C

35. What type of association is shown on the scatterplot below?

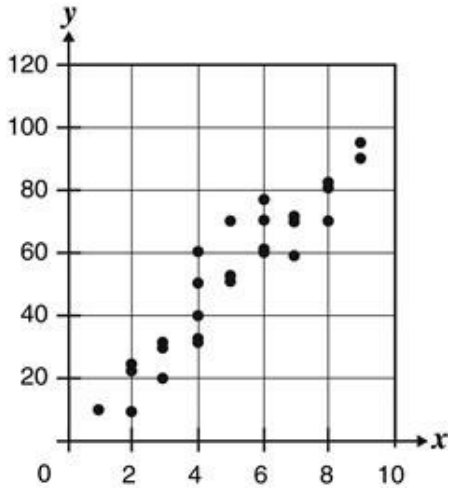


A. positive

B. negative

C. none

36. **What type of correlation is shown in this scatterplot?**



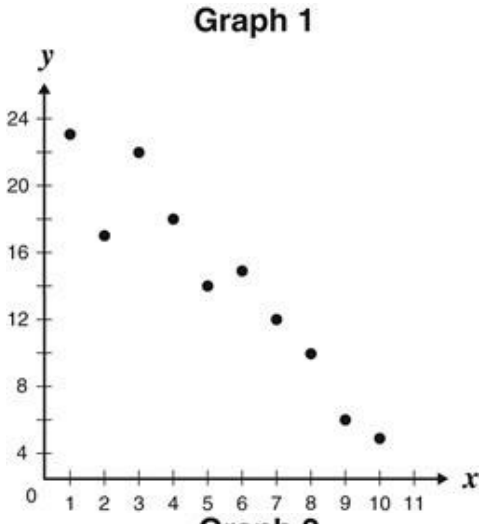
A. a decline

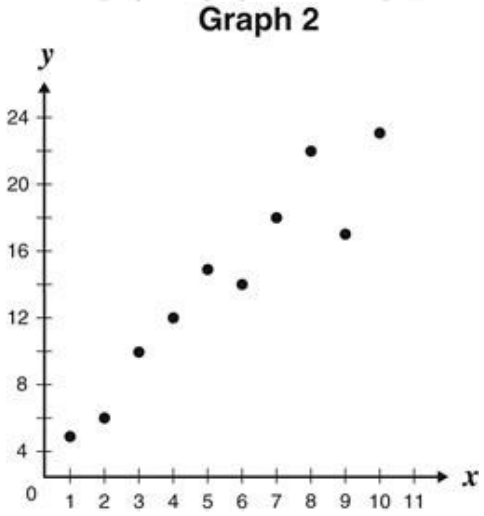
B. no correlation

C. a positive correlation

D. a negative correlation

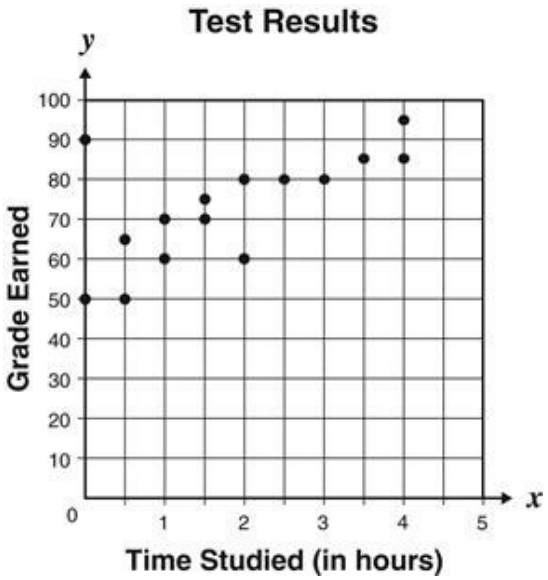
37. **Which statement is true about the scatter plots?**





A. Graph 1 shows a strong relationship, and Graph 2 shows a weak relationship.
B. Graph 2 shows a strong relationship, and Graph 1 shows a weak relationship.
C. Graph 1 shows a negative correlation, and Graph 2 shows a positive correlation.
D. Graph 2 shows a negative correlation, and Graph 1 shows a positive correlation.

38. **The scatterplot below shows the number of minutes students studied for a test and the grades the students received on the test.**

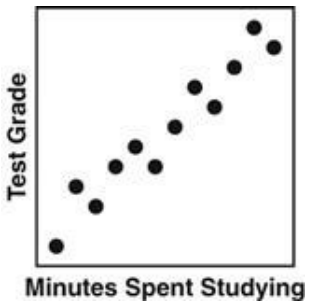


Which conclusion can be drawn from the data?

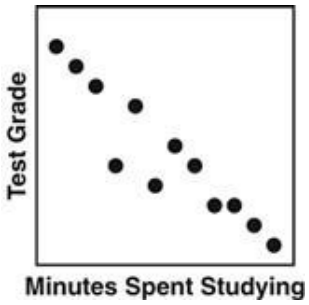
A. All students who studied for more than half an hour received grades of 75 or higher.
B. All students who studied for less than 2 hours received grades of less than 70.
C. All students who studied for at least 3 hours received grades of 80 or higher.
D. All students who studied for 2 hours received grades of 80 or higher.

39. **Ms. Charles asked her students how many minutes they spent studying for a test the night before the test was given. She found that the time students spent studying and their test scores had a positive correlation. Which scatterplot below shows this relationship?**

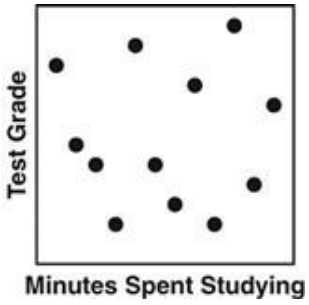
A.



B.

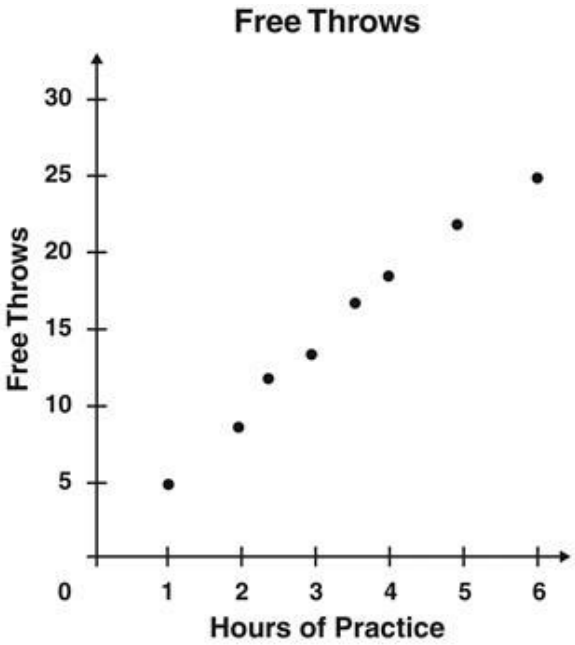


C.



D.

40. **Jan practices free throws in basketball practice every week. She recorded the number of free throw points she made and the time she spent practicing on the graph below.**



Based on the graph, which statement is true?

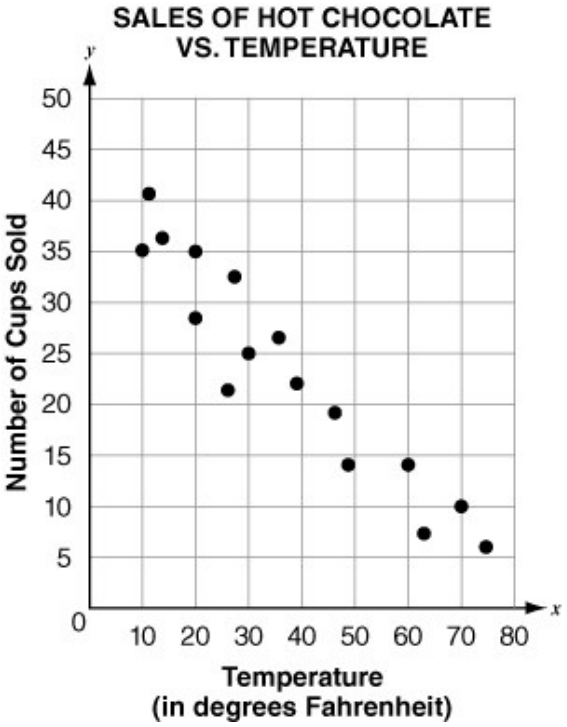
A. The shorter amount of time Jan practices, the more free throw points she makes.

B. The more time Jan practices, the fewer free throw points she makes.

C. The more time Jan practices, the more free throw points she makes.

D. There is no relationship between the number of free throw points Jan makes and the amount of time she spends practicing.

41. 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

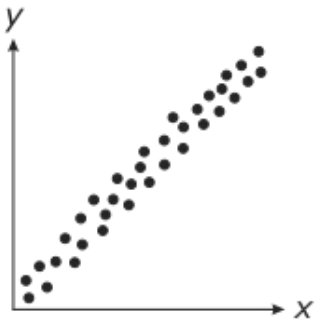
B. Positive linear

C. Negative linear

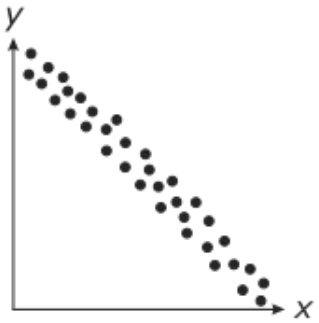
D. No association

42. Which scatterplot shows a negative association between the data?

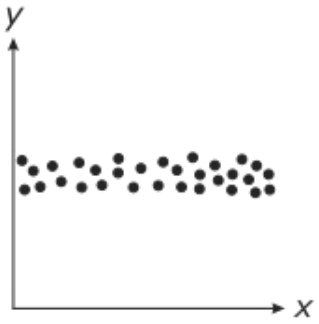
A.



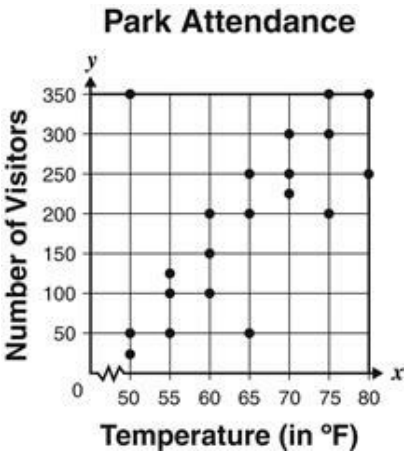
B.



C.



43. **Mr. Sanchez recorded the number of visitors to a county park for 20 days and the average temperature for these 20 days. He recorded his data on the scatterplot below.**



Which statement best describes the relationship between the number of visitors and the average temperature for these 20 days?

A. As the temperature decreased, the number of visitors remained constant.
B. As the temperature decreased, the number of visitors increased.
C. As the temperature increased, the number of visitors increased.
D. As the temperature increased, the number of visitors decreased.

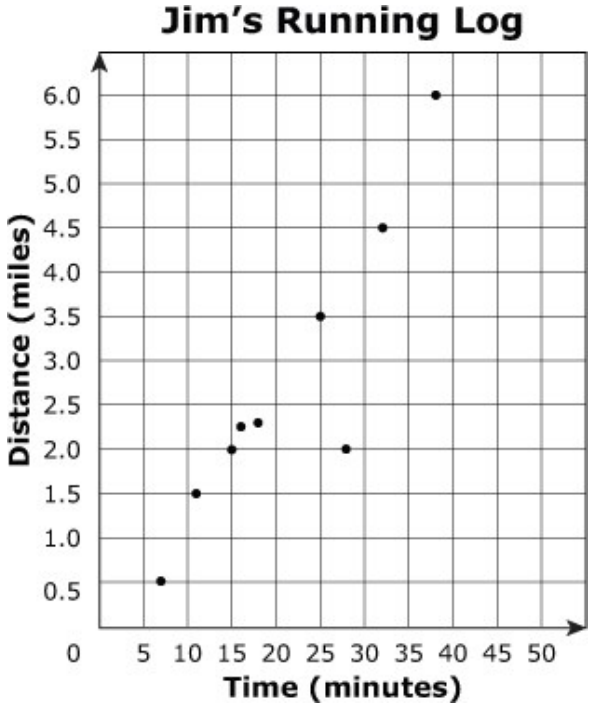
44. The data below shows the daily high temperature for a city over one week.

Day	1	2	3	4	5	6	7
Temperature	87	89	89	91	92	94	95

What is the type of association for these data?

A. irrational
B. none
C. negative
D. positive

45. Jim kept a log of the number of minutes it took him to run several different distances and then created a scatter plot of the data.



Which **best** describes the outlier in this data set?

A. Jim ran 0.5 miles in 7 minutes.

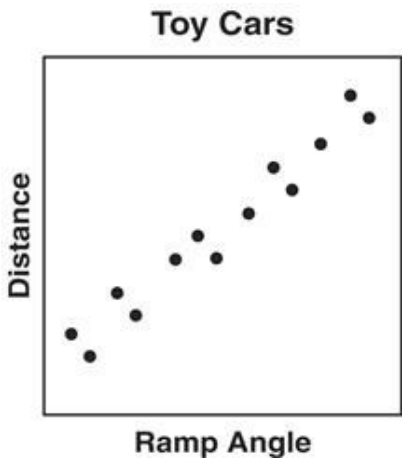
B. Jim ran 2 miles in 28 minutes.

C. Jim ran 28 miles in 2 hours.

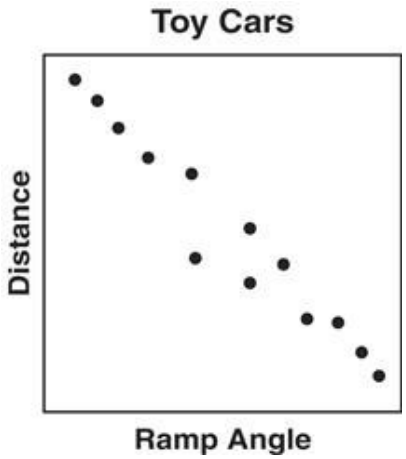
D. Jim ran 38 miles in 6 hours.

46. **The students in Ms. Billings' class rolled toy cars down ramps with different angles. Which graph below shows that as the angle of the ramp increased, the distance the car rolled increased?**

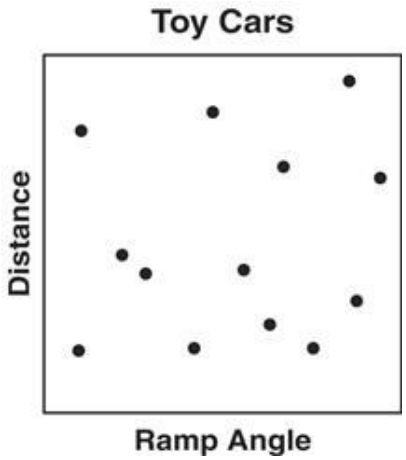
A.



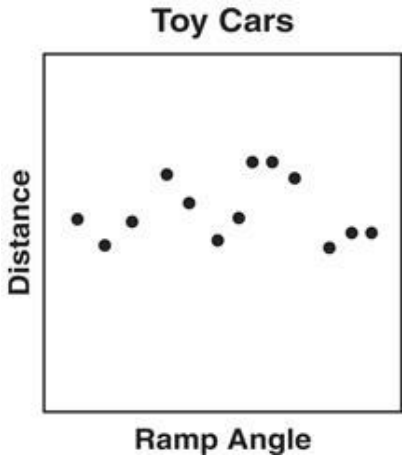
B.


Toy Cars
Distance
Ramp Angle

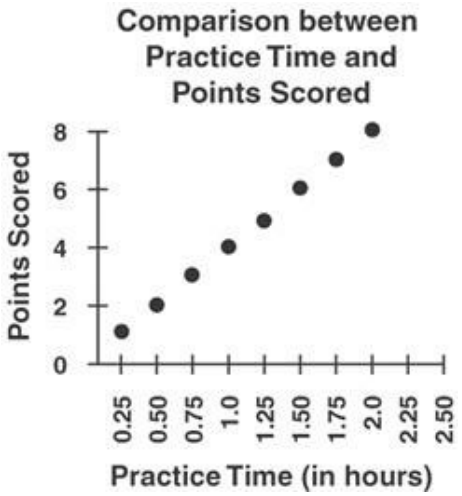
C.


Toy Cars
Distance
Ramp Angle

D.


Toy Cars
Distance
Ramp Angle

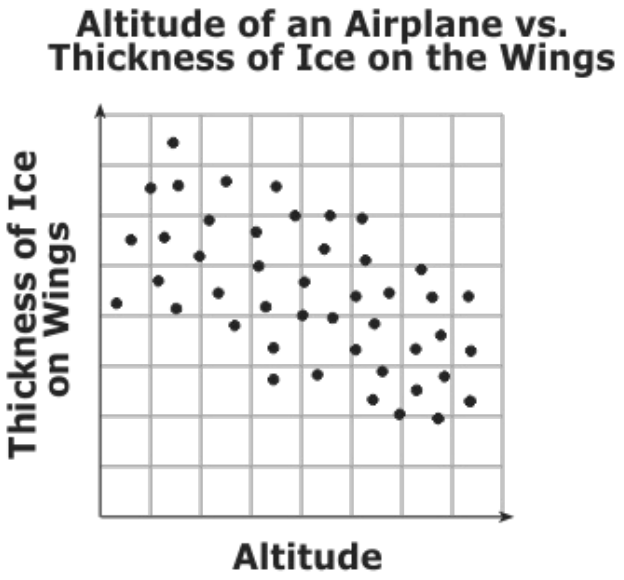
47. **At the end of the basketball season, Chandi surveyed the basketball team to find if there was a relationship between the amount of time practiced and the average number of points scored per game. She displayed her data in the scatterplot below.**



Which statement describes the relationship between practice time per week and average number of points per game?

A. The number of points scored decreases as the amount of practice time increases.
B. The number of points scored increases as the amount of practice time increases.
C. The number of points scored increases as the amount of practice time decreases.
D. There is no relationship between the number of points scored and the amount of practice time.

48. The scatterplot shows the relationship between the altitude and thickness of ice on the wings of an airplane.



Which describes the association between these two variables?

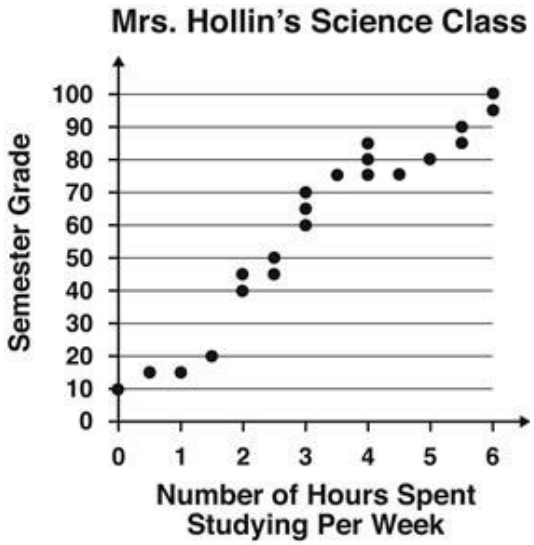
A. positive

B. negative

C. varied

D. none

49. **Mrs. Hollin gave her science class a survey that would compare the numbers of hours students spent studying each week to their semester grades. The results of the survey are shown on the graph below.**



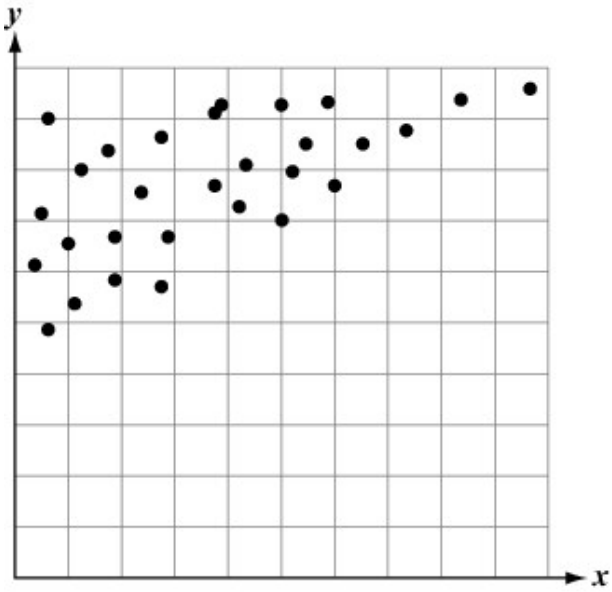
Grading Scale

A	93–100
B	85–92
C	78–84
D	70–77
F	0–69

Which claim concerning students in Mrs. Hollin's science class is best supported by the data in the graph?

A. All students who studied 3 hours earned a semester grade of at least a "D."
B. All students who studied 4 hours earned a semester grade of at least a "C."
C. All students who studied 5 hours earned a semester grade of "B."
D. All students who studied 6 hours earned a semester grade of "A."

50. Which statement **best** describes the association between variables shown on the scatter plot below?



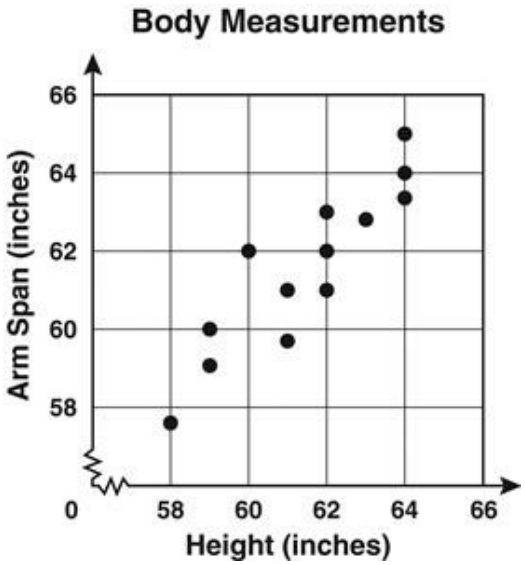
A. There is a positive association as y tends to increase as x increases.

B. There is a nonlinear association as y tends to decrease as x increases.

C. There is a negative association as y tends to decrease as x decreases.

D. There is no association between variables as y tends to increase as x decreases.

51. **Mr. Larson recorded the heights and arm spans of the students in his science class. The results are shown on the scatterplot below.**



Which phrase best describes the correlation based on the scatterplot?

A. no correlation
B. positive correlation
C. negative correlation
D. cannot be determined

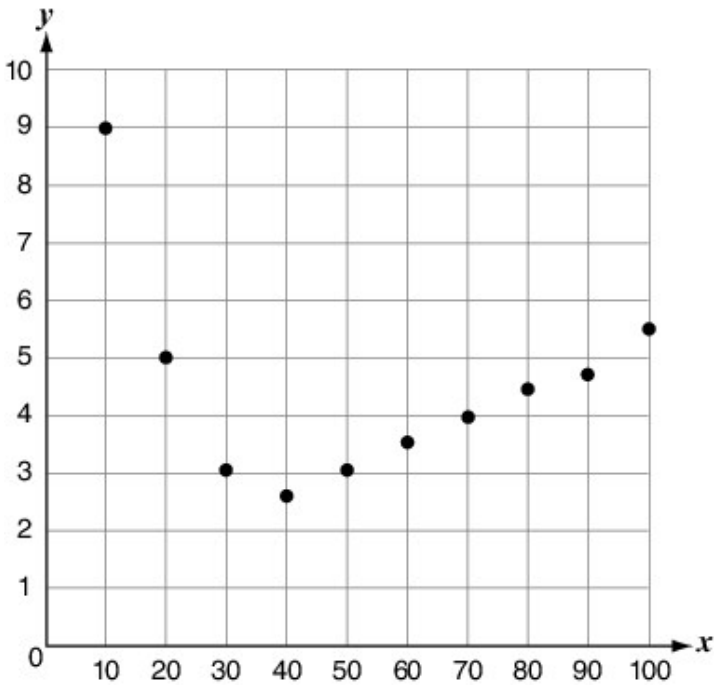
52. Which situation would ***most likely*** have a scatterplot with a negative correlation?

A. driving speeds and traveling times
B. outside temperatures and cooling costs
C. heights of students and the grades on their math tests

53. 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

54. 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. $x = 100$

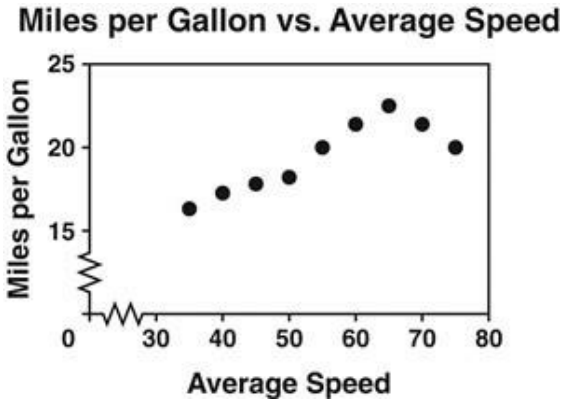
55. Which situation would ***most likely*** have a negative correlation?

A. the amount of study time and the score on a test

B. the amount of time a heater is on and the temperature of the room

C. the amount of time a candle is burned and the height of the candle

56. **The graph shows the relationship between speed and miles per gallon for a particular car.**

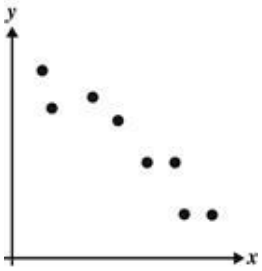


What is the approximate number of miles per gallon when traveling 55 miles per hour?

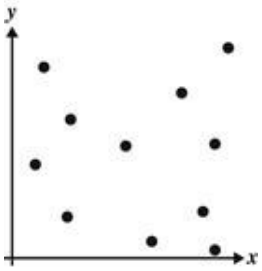
A. 18
B. 20
C. 21
D. 22

57. **The results of four experiments are shown below. Which results appear to show that there is no relationship between the two variables?**

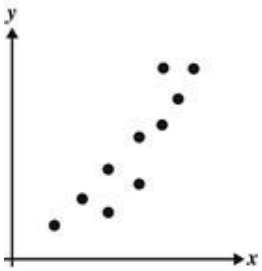
A.



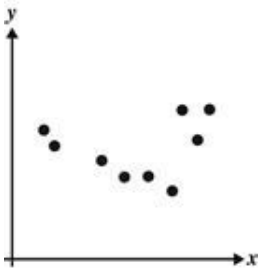
B.



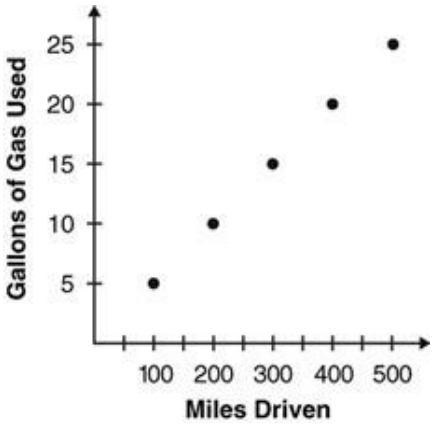
C.



D.

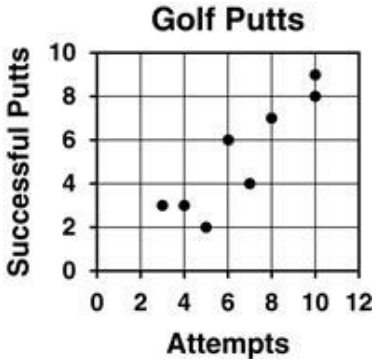


58. **Which statement describes the relationship between the data sets displayed on the scatterplot?**



A. The number of miles driven decreases as the gallons of gas used increases.
B. The number of miles driven stays the same as the gallons of gas used increases.
C. There is no relationship between the number of miles driven and gallons of gas used.
D. The number of miles driven increases as the gallons of gas used increases.

59. **Members of the golf team recorded their putting results on the scatterplot below.**



Which table best represents the data recorded?

A.

Attempts	Successful
3	3
10	9
5	2
6	6
4	3
8	7
10	8
7	4

B.

Attempts	Successful
3	3
9	10
2	5
6	6
3	4
7	8
8	10
4	7

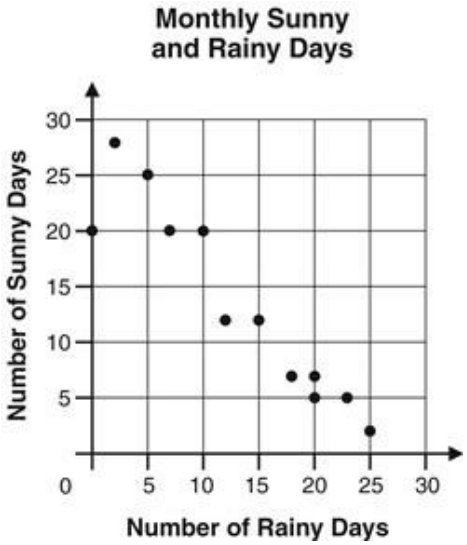
C.

Attempts	Successful
2	2
9	8
5	1
5	5
3	2
7	6
9	7
6	3

D.

Attempts	Successful
4	4
11	10
6	3
7	7
5	4
9	8
11	9
8	5

60. **The scatterplot below shows the relationship between the number of sunny days and the number of rainy days.**



Which statement describes the relationship?

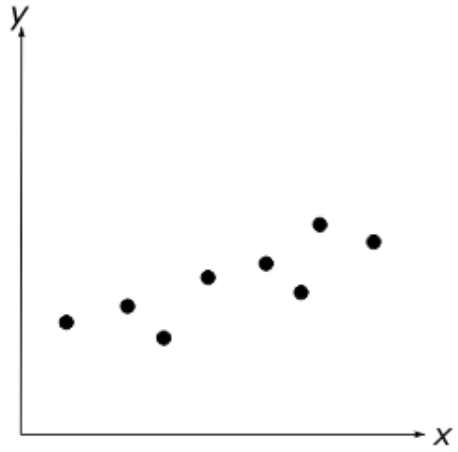
A. The number of sunny days decreases as the number of rainy days increases.
B. The number of sunny days increases as the number of rainy days increases.
C. The number of sunny days stays the same as the number of rainy days increases.
D. There is no relationship between the number of sunny days and the number of rainy days.

61. A scatterplot is said to have a negative correlation. Which statement ***best*** describes this data?

A. As the *x*-values increase, the *y*-values decrease.
B. As the *x*-values increase, the *y*-values increase.
C. As the *x*-values increase, the *y*-values do not change.

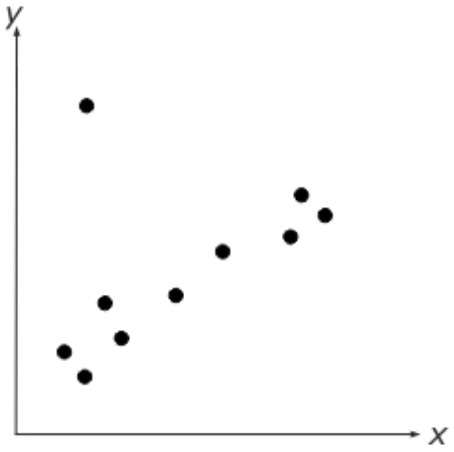
62. Which graph displays data with a negative linear association with an outlier?

A.

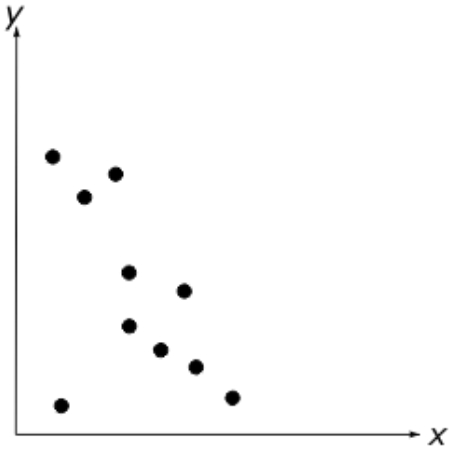


B.

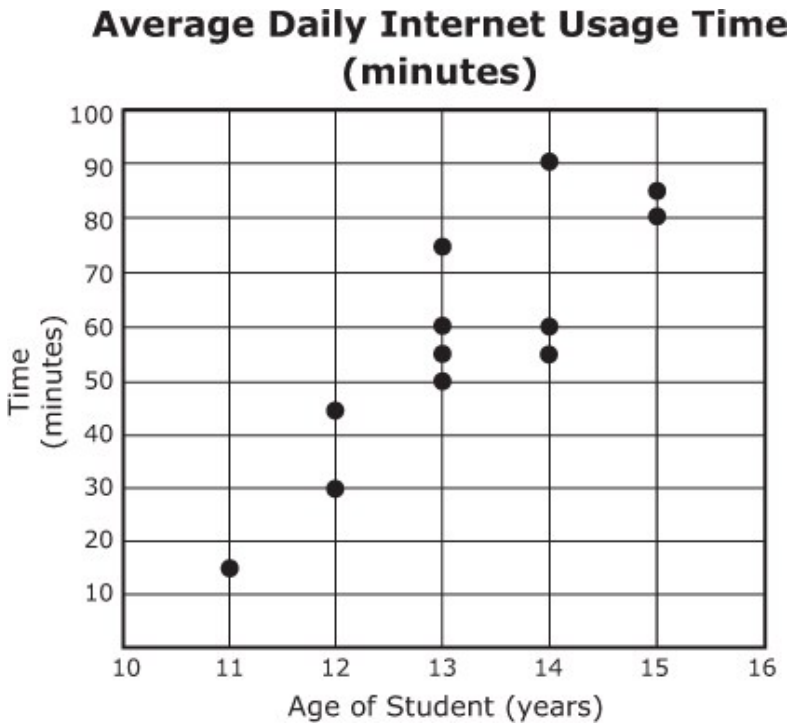
C.



D.



63. 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?

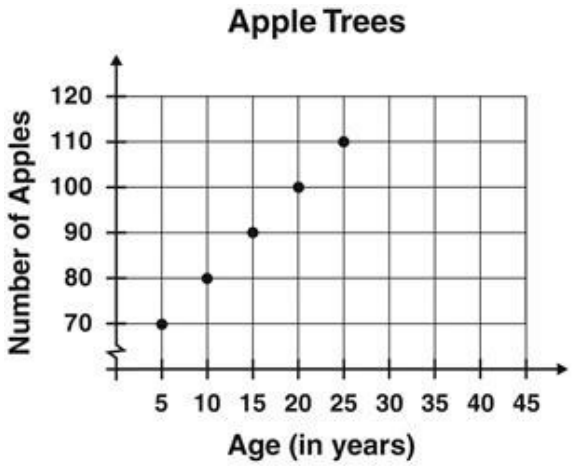
A. a negative nonlinear association

B. a positive nonlinear association

C. a negative linear association

D. a positive linear association

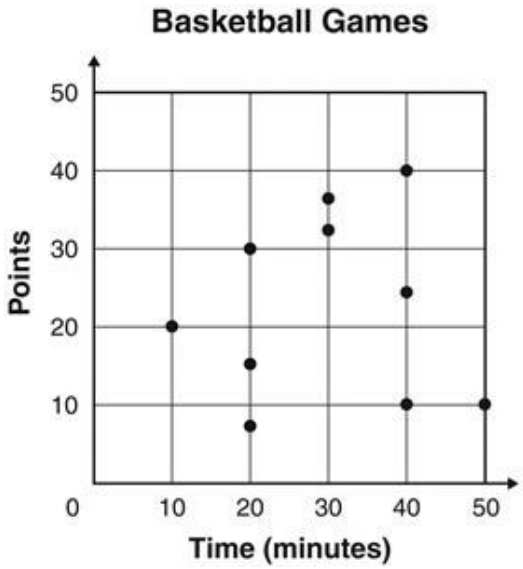
64. **The scatterplot below shows the relationship between the age of an apple tree and how many apples it produces in one year.**



Based on this scatterplot, what is the best prediction of the quantity of apples produced by an 18-year-old apple tree in one year?

A. 75
B. 84
C. 96
D. 115

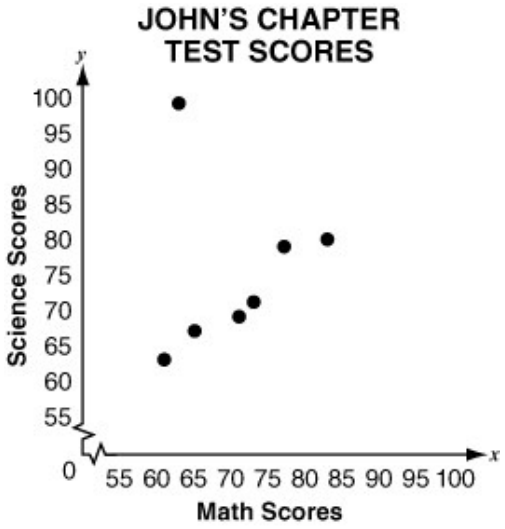
65. **The scatterplot shows the amount of time played and the number of points scored by ten basketball players during the last four games.**



Which conclusion is supported by the graphed data?

A. Most of the players scored more than 30 points.
B. Most of the players scored fewer than 30 points.
C. The player who played the longest scored the most points.
D. The player who played the shortest time scored the fewest points.

66. The scatter plot below shows John's scores in the seven math and science chapter tests conducted this semester.



Which statement **best** describes the association between his math and science test scores?

A. There is a positive linear association between the math and science scores.

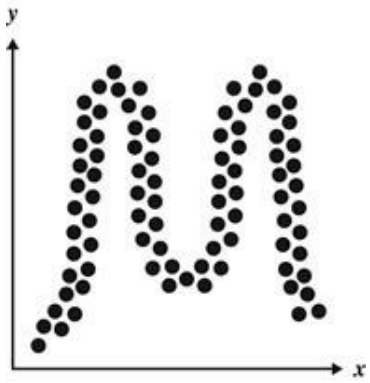
B. There is a negative linear association between the math and science scores.

C. There is a positive linear association between the math and science scores, with one of the data points being an outlier.

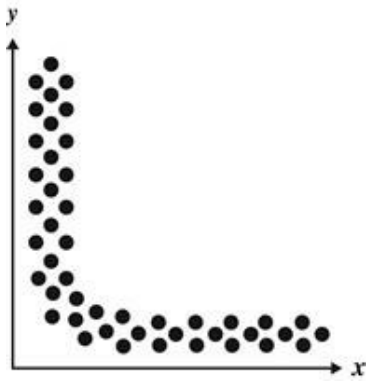
D. There is a negative linear association between the math and science scores, with one of the data points being an outlier.

67. **Which collection of points appear to have a line of best fit?**

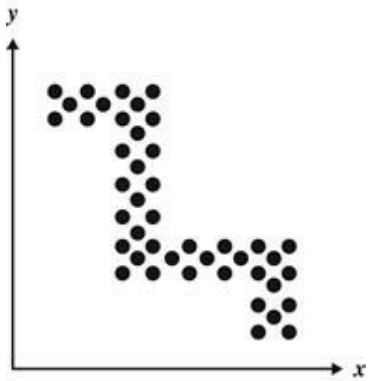
A.



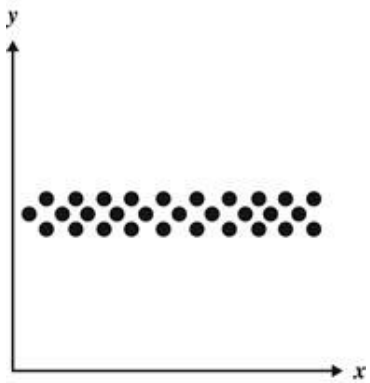
B.



C.



D.



68. The chart below displays data of the number of miles 5 different cars travel on a tank of gas.

Number of Miles Traveled	Gallons of Gas in each tank
300	10
375	14
425	15
480	14
600	10

If the outlier is removed, ***approximately*** what is the average number of miles a car will travel on a gallon of gas?

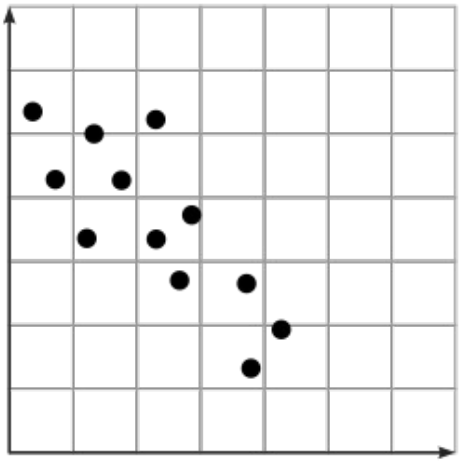
A. 30 miles per gallon

B. 36 miles per gallon

C. 37 miles per gallon

D. 40 miles per gallon

69. What type of association describes the data in the scatterplot below?



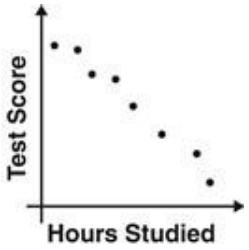
A. none

B. positive

C. negative

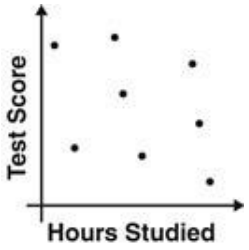
70. **Susan took a survey and found that the more hours her classmates studied, the better their test scores were. Which data set below shows the same kind of relationship as Susan's data?**

A.



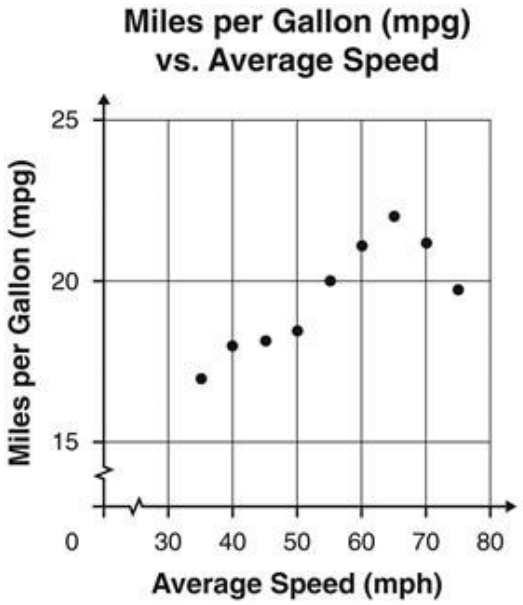
B.

C.



D.

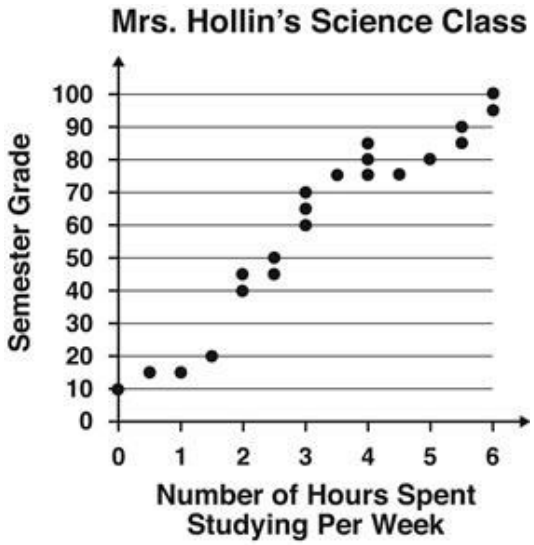
71. **The scatterplot below shows the relationship between miles per gallon and the average speed driven for a particular car.**



Which statement is best supported by the data?

A. As speed increases, mpg increases.
B. As speed increases, mpg decreases.
C. As speed increases, mpg increases and then decreases.
D. As speed increases, mpg decreases and then increases.

72. **Mrs. Hollin gave a survey to her Science class to compare the number of hours each student spent studying per week to their semester grade. The results of the survey are recorded in the graph below.**



Grading Scale
A 93–100
B 85–92
C 78–84
D 70–77
F 0–69

Which claim concerning students in Mrs. Hollin's class is best supported by the data in the graph?

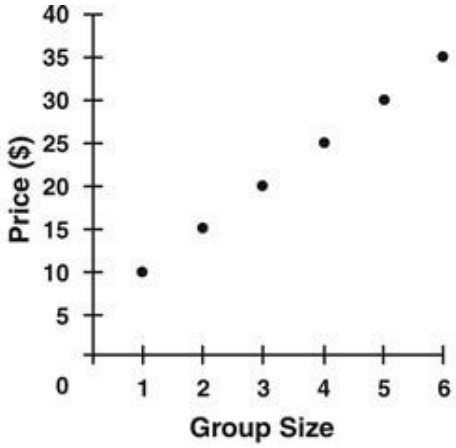
A. As the number of hours spent studying increases, the semester grade increases.
B. As the number of hours spent studying decreases, the semester grade increases.
C. As the number of hours spent studying increases, the semester grade decreases.
D. There is no relationship between the number of hours spent studying and the semester grade.

73. **The table below shows group ticket prices at a county fair.**

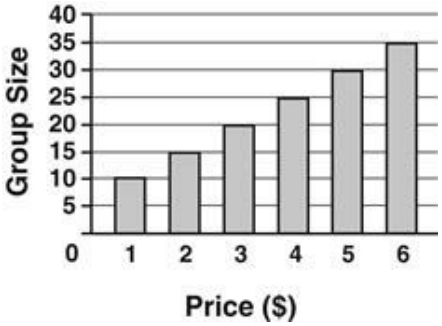
Group Size	Price ($)
1	10
2	15
3	20
4	25
5	30
6	35

Which graph represents this pricing system?

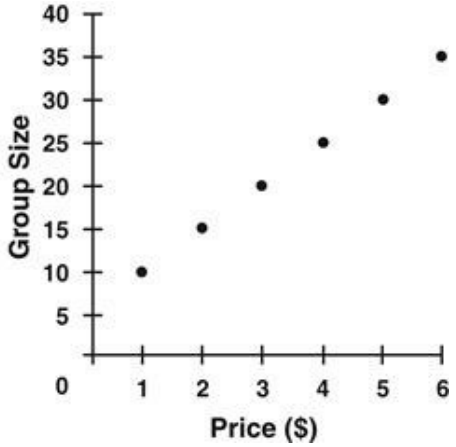
A.


Price ($)
40
35
30
25
20
15
10
5
0
1
2
3
4
5
6
Group Size

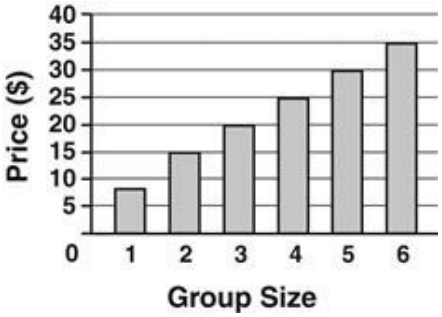
B.


Group Size
40
35
30
25
20
15
10
5
0
1
2
3
4
5
6
Price ($)

C.

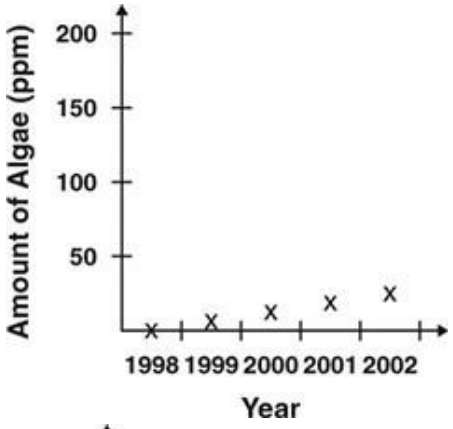

Group Size
40
35
30
25
20
15
10
5
0
1
2
3
4
5
6
Price ($)

D.

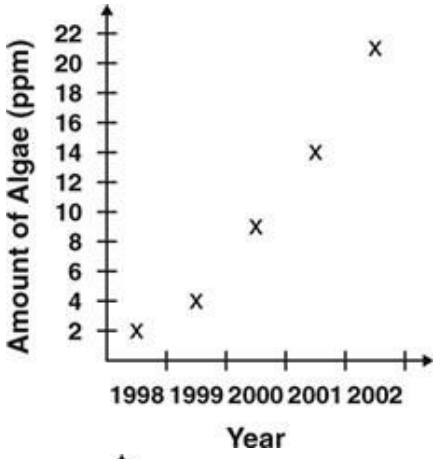

Price ($)
40
35
30
25
20
15
10
5
0
1
2
3
4
5
6
Group Size

74. **Ryan was doing a report for class that showed the growth of algae levels in the Washington River. He concluded that the levels of algae had greatly increased over the past five years. Which graph best supports Ryan's conclusion?**

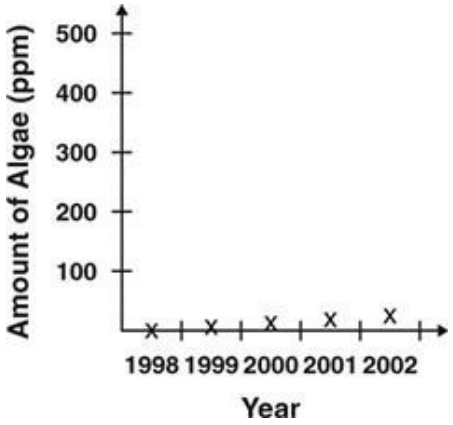
A.



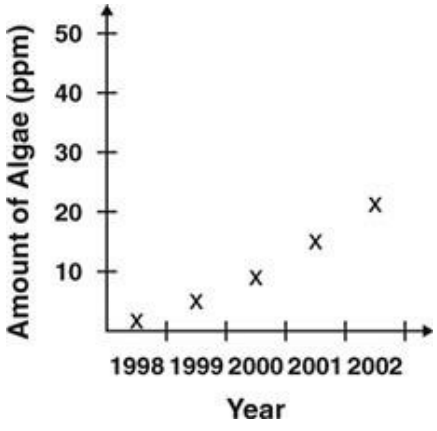
B.



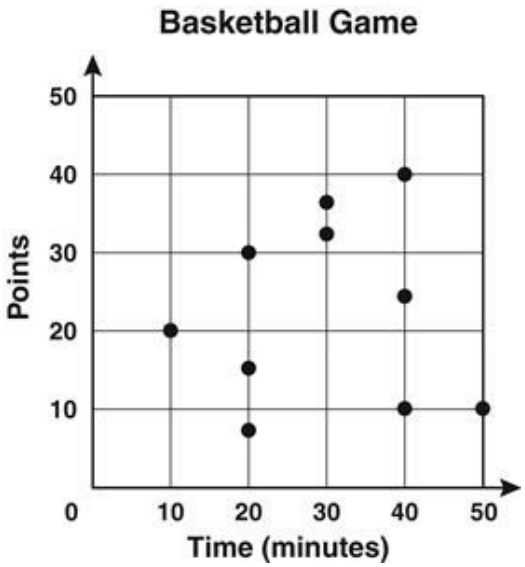
C.



D.



75. **The scatterplot shows the amount of time played and the number of points scored by ten basketball players during their last four games.**

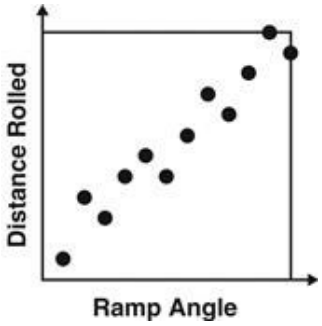


Which conclusion best describes the data?

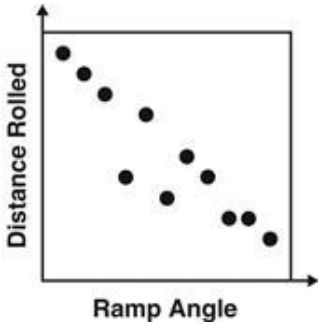
A. The players who scored the most points played the longest.
B. There is no correlation between the time played and the number of points scored.
C. There is a positive correlation between time played and the number of points scored.
D. There is a negative correlation between time played and the number of points scored.

76. **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 scatter plots below shows this relationship?**

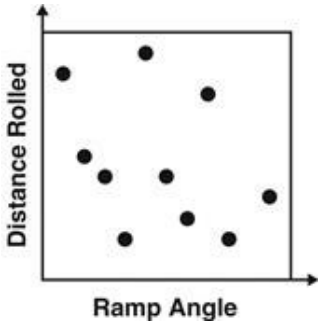
A.



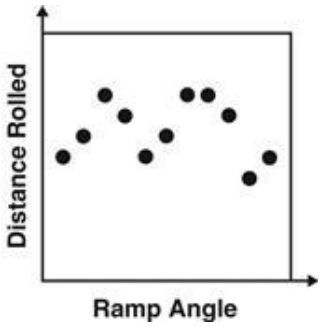
B.



C.



D.



77. **Gerald has a number of plants of the same species growing in a greenhouse. He records the age and height of each plant. The data is shown in the table.**

Plant Results

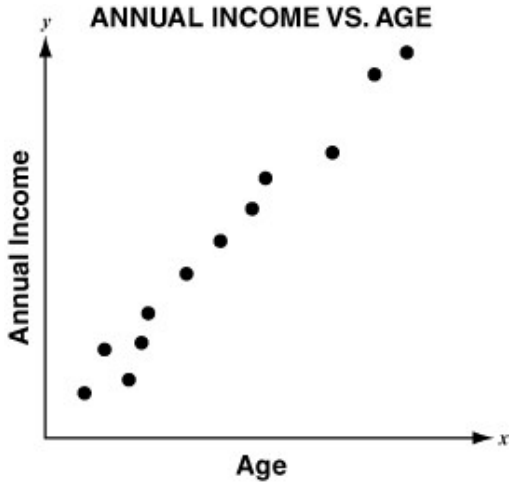
Specimen	Age (days)	Height (mm)
1	34	90
2	62	150
3	43	62
4	21	54
5	50	130
6	72	172
7	48	122
8	18	48
9	30	77

Based on the data, which plant specimen is an outlier?

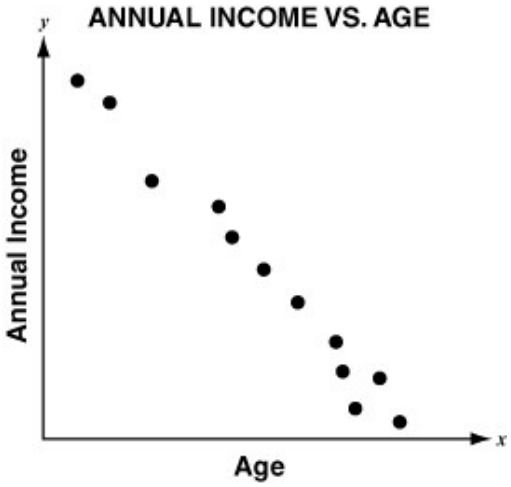
A. 2
B. 3
C. 6
D. 8

78. 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?

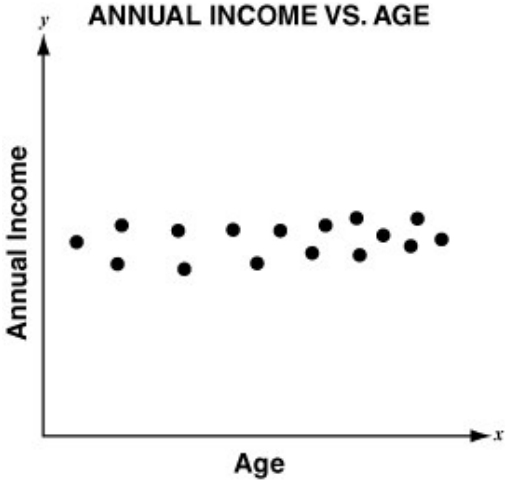
A.



B.

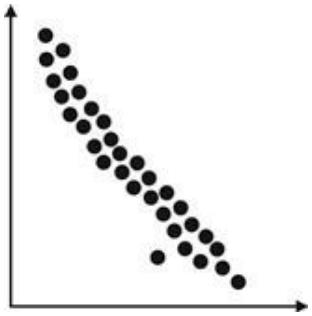


C.



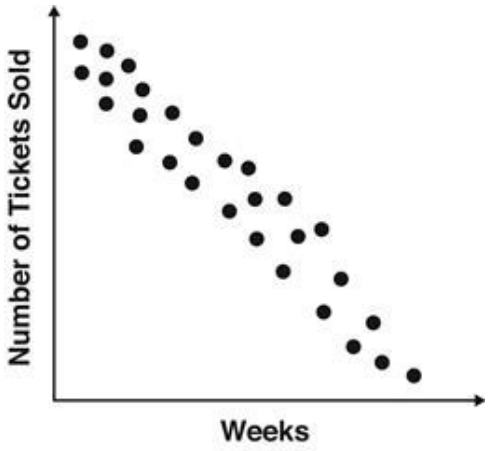
D.

79. **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

80. **The scatterplot below shows the relationship between the number of tickets sold to a play and the number of weeks the play was in production.**



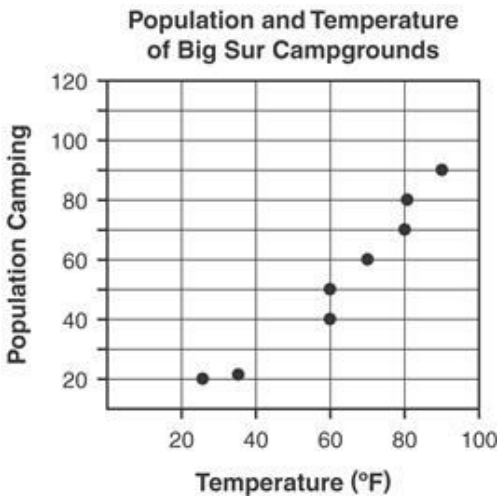
What type of correlation does the scatterplot indicate?

A. cannot be determined
B. negative correlation
C. positive correlation
D. no correlation

81. Which data would ***most likely*** show a negative correlation when graphed on a scatterplot?

A. address of home and eye color
B. favorite color and favorite food
C. age of vehicle and value of vehicle
D. miles traveled and time spent driving

82. **The scatterplot shows the relationship between the temperature at Big Sur Campgrounds and the number of campers.**



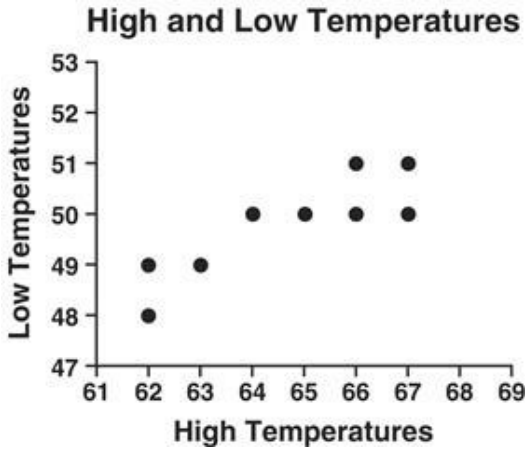
What kind of correlation is shown by the data?

A. positive correlation
B. negative correlation
C. constant correlation
D. no correlation

83. Which situation would ***most likely*** have a scatterplot with a positive correlation?

A. students' heights and their scores on a history test
B. the amount of time a candle is burned and the height of the candle
C. the outside temperature and the cost to cool a house

84. **Which table most accurately portrays the data on the graph?**



A. **High and Low Temperatures**

High	Low
50	65
51	66
50	64
49	62
48	62
49	63
50	64
50	66
51	67
50	67

B. **High and Low Temperatures**

High	Low
65	50
66	51
64	50
62	49
62	48
63	49
64	50
66	50
67	51
67	50

C. **High and Low Temperatures**

High	Low
65	51
66	50
64	51
62	48
62	49
63	48
64	51
66	50
67	48
67	49

D. **High and Low Temperatures**

High	Low
65	52
66	51
64	52
62	52
62	48
63	48
64	51
66	51
67	52
67	49

85. 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

86. The chart below represents data collected from 10 eighth grade boys showing their height in inches and their weight in pounds.

Height (inches)	60	63	65	61	70	55	58	61	64	57
Weight (pounds)	125	139	155	136	170	108	116	139	129	121

Which statement ***best*** describes the association between height and weight of the ten boys?

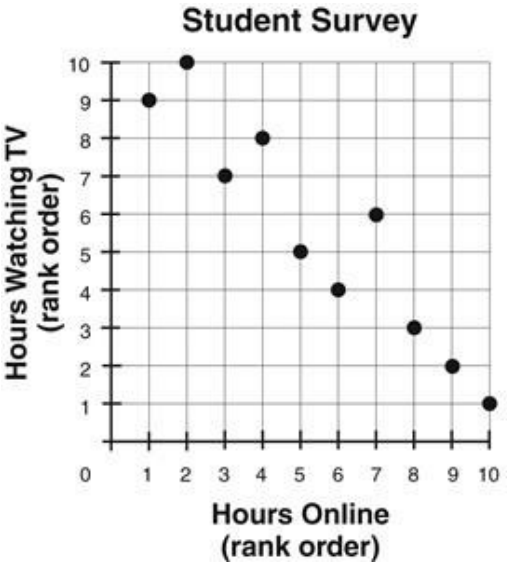
A. The data shows a negative, linear association.

B. The data shows a positive, linear association.

C. The data shows a non-linear association.

D. The data shows no association.

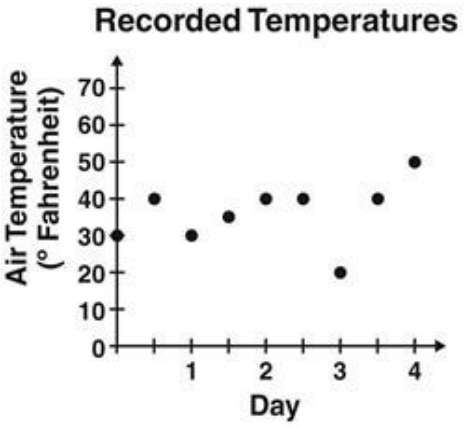
87. **Mr. Vail surveyed 10 of his students to find the amounts of time they spent watching television (TV) and the amounts of time they spent online last week. For each activity, he ranked the students using the numbers 1 to 10 to represent the rank order from least amount of time to greatest amount 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.

88. **A graph of air temperature over 4 days is shown below. The beginning of the 4-day period is day 0. Which table accurately describes the information presented in the graph?**



A.

Recorded Temperatures

Day	Air Temperature (°Fahrenheit)
30	0
30	1
40	2
20	3

B.

Recorded Temperatures

Day	Air Temperature (°Fahrenheit)
0	30
1	40
2	30
3	50

C.

Recorded Temperatures

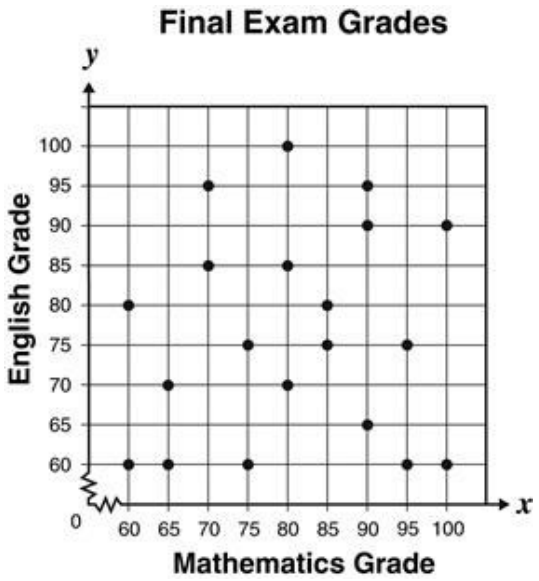
Day	Air Temperature (°Fahrenheit)
0	30
1	30
2	40
3	20

D.

Recorded Temperatures

Day	Air Temperature (°Fahrenheit)
30	0
40	1
30	2
50	3

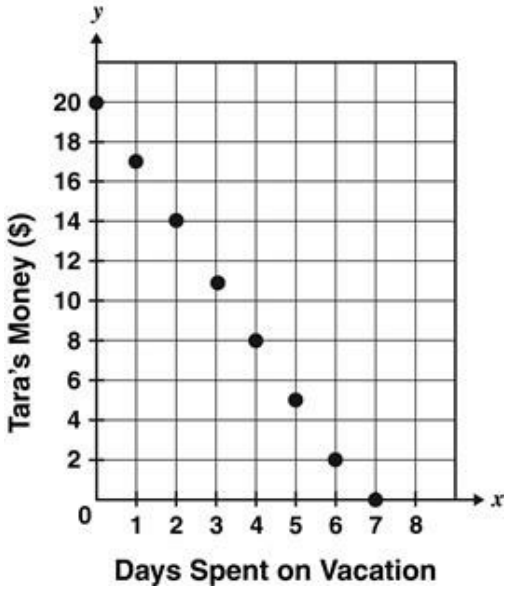
89. **The scatterplot shows pairs of final exam grades (*x*, *y*) for a group of students.**



Which phrase is the best description of the correlation between the mathematics exam grades and the English exam grades?

A. strongly positive
B. strongly negative
C. neither positive nor negative
D. normal or standard

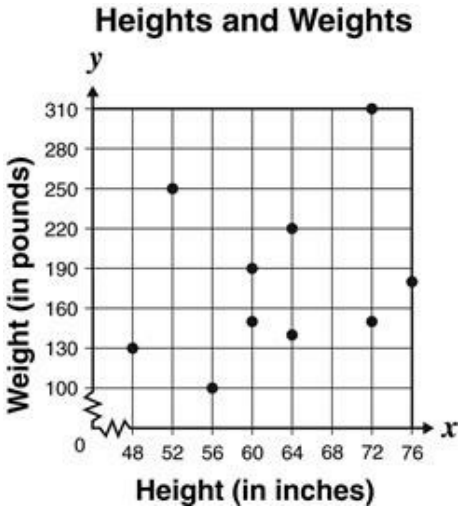
90. **Tara spent $20 while on vacation. The graph shows how much money she had at the end of each day.**



How much money did Tara have at the end of the third day of her vacation?

A. $8.00
B. $10.00
C. $11.00
D. $14.00

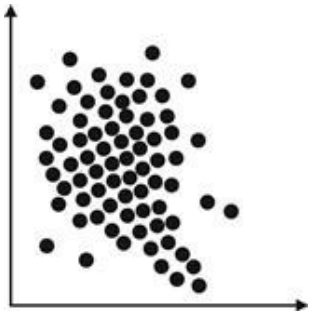
91. **The heights and weights of 10 people are represented on the scatterplot below.**



What type of relationship exists between the heights and weights of these 10 people?

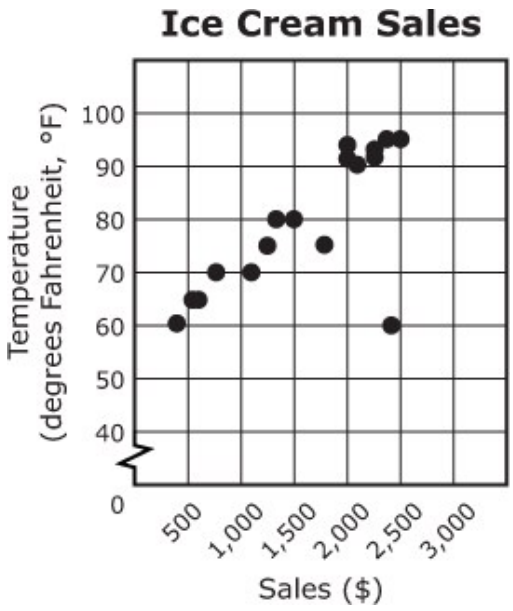
A. none
B. positive
C. negative
D. constant

92. **The scatterplot below suggests which of the following types of data relationship?**



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

93. The owner of an ice cream store created the scatter plot below to examine the effects of the average outside temperature on daily ice cream sales.



Based on the scatter plot, which trend about daily sales is **most** supported by the data?

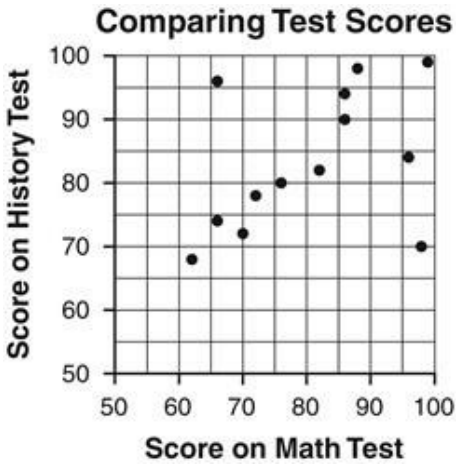
A. Daily sales will increase as the outside temperature increases.

B. Daily sales will decrease as the outside temperature increases.

C. The daily sales clustered at $2,000 and $2,500 regardless of temperature.

D. The daily sales were stable when the outside temperature was 60˚F.

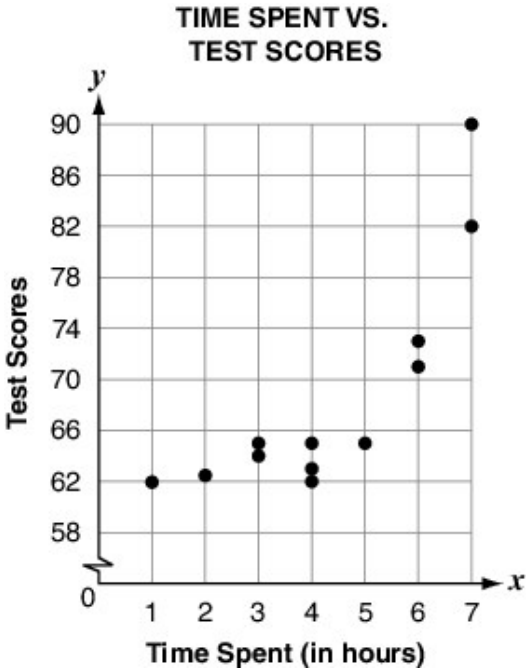
94. **The scatterplot below shows the history test score and math test score for each student in Mr. Phillip's homeroom.**



Which statement about the data displayed in the scatterplot is true?

A. Students with a score above 80 on the math test always received a lower score on the history test.
B. Students with a score below 75 on the history test always received a higher score on the math test.
C. Most scores on the math test were higher than scores received on the history test.
D. Most scores on the history test were higher than scores received on the math test.

95. The table below shows the time spent by students preparing for a class test and their test scores.



Which association **best** describes the pattern between the time spent and the test scores?

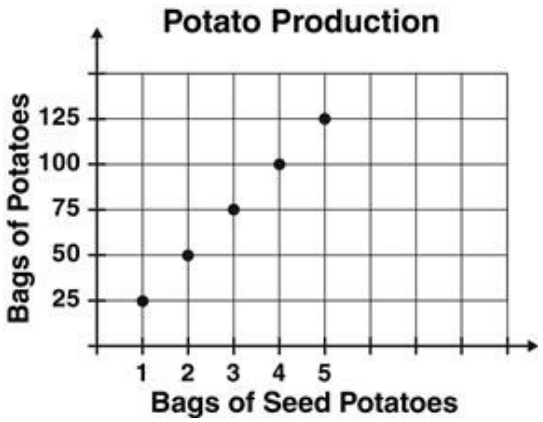
A. no association

B. nonlinear association

C. positive linear association

D. negative linear association

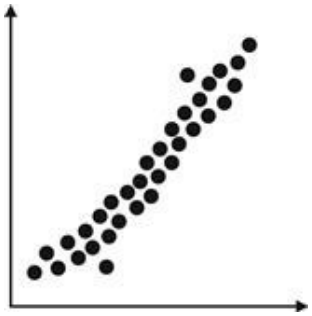
96. **The graph shows the relationship between the number of bags of seed potatoes and the number of bags of potatoes grown from them.**



Based on the graph, what is the best prediction of the number of bags of potatoes grown from six bags of seed potatoes?

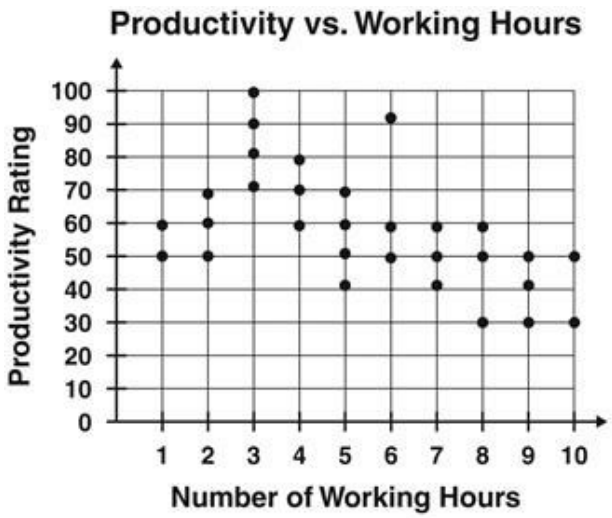
A. 130
B. 135
C. 150
D. 175

97. **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

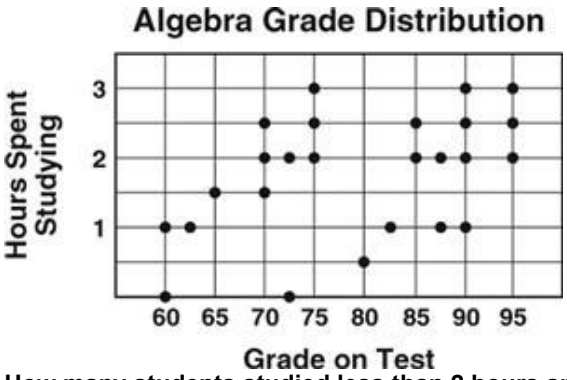
98. **The scatterplot below shows the productivity ratings of 30 workers based on the number of hours each worker has been on the job during the day.**



Based on the data in the scatter plot, what number of hours is associated with the beginning of the decline in worker productivity ratings?

A. 3 hours
B. 4 hours
C. 7 hours
D. 8 hours

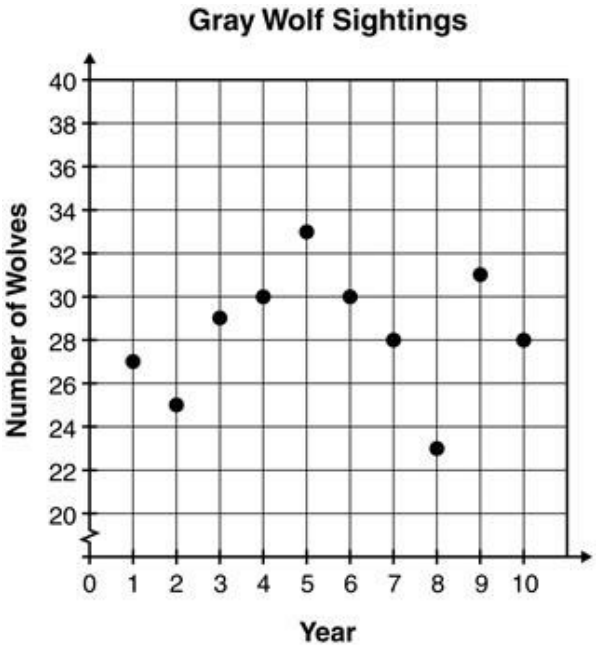
99. **The graph below shows the relationship between the hours spent studying and the grade on an algebra test for 25 students in a certain class.**



How many students studied less than 2 hours and received a grade of at least 80 on the test?

A. 4
B. 9
C. 10
D. 13

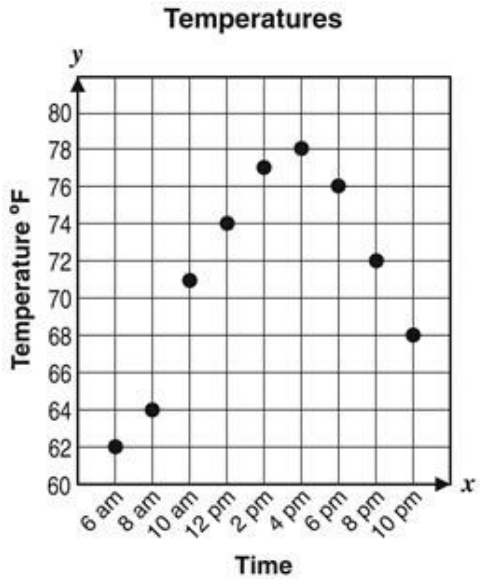
100. **A scientist recorded the number of gray wolves in an area over a 10-year period. The data is shown in the graph below.**



When was the wolf population the largest?

A. Year 4
B. Year 5
C. Year 8
D. Year 9

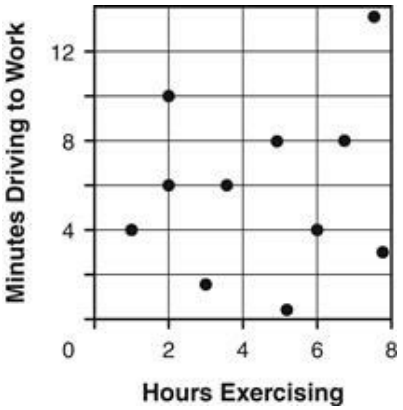
101. **Jeremiah measured the temperature at various times during the day. He recorded the results on the graph shown.**



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

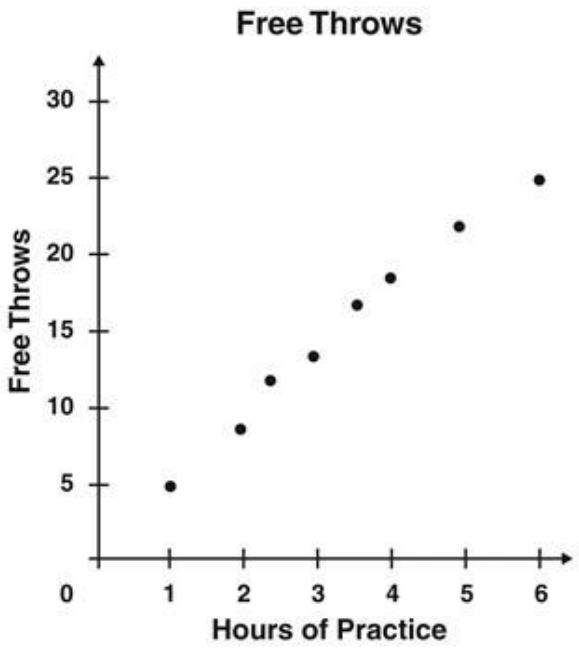
102. **The scatterplot below shows the relationship between the number of hours a person exercises and the time it takes to drive to work.**



Which conclusion does the data most strongly support?

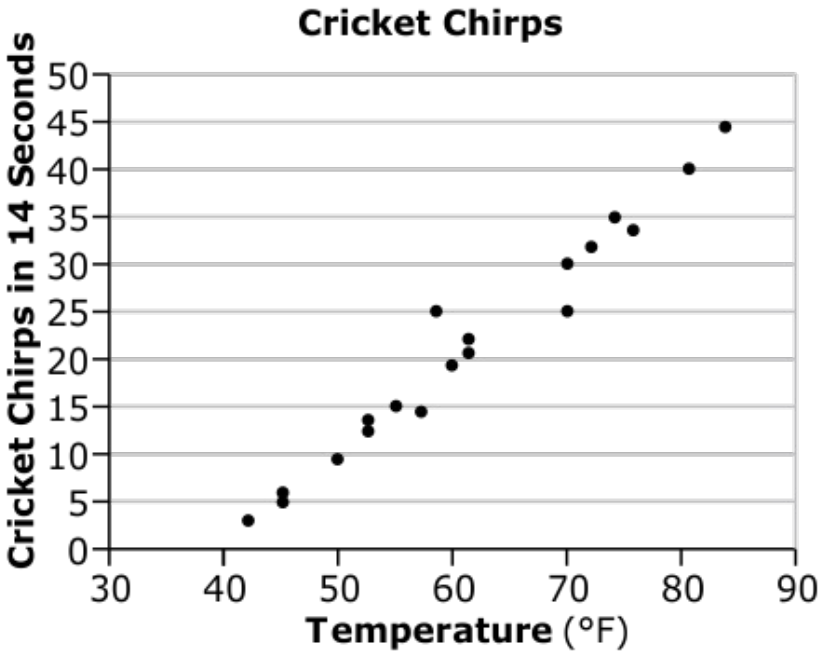
A. The time it takes to drive to work decreases as the number of hours exercising increases.
B. The time it takes to drive to work increases as the number of hours exercising increases.
C. The time it takes to drive to work stays the same as the number of hours exercising increases.
D. The time it takes to drive to work is not related to the number of hours exercising.

103. **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

104. Joseph collected data about the temperature versus the number of times a cricket chirped in 14 seconds and made the scatterplot below.



What kind of association is represented here?

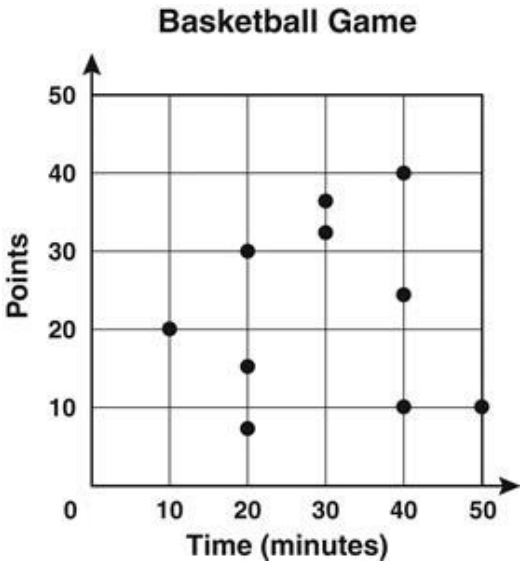
A. negative association

B. positive association

C. no association

D. irrational association

105. **The scatterplot below shows the amount of time played and the number of points scored by ten basketball players during their last four games.**

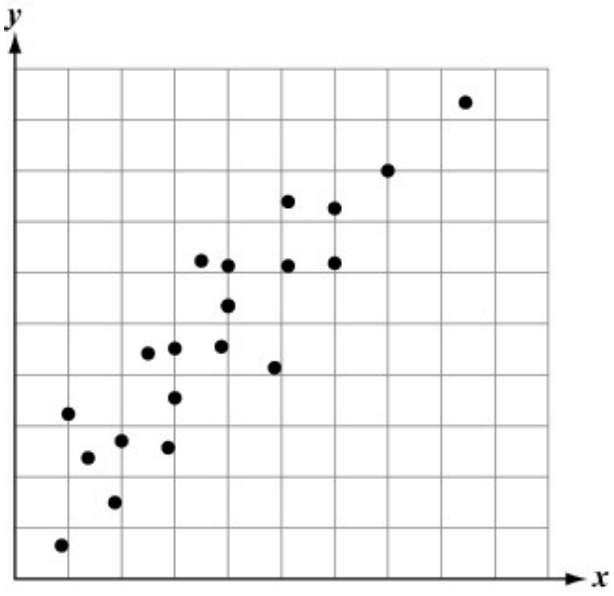


Which conclusion is supported by the scatterplot?

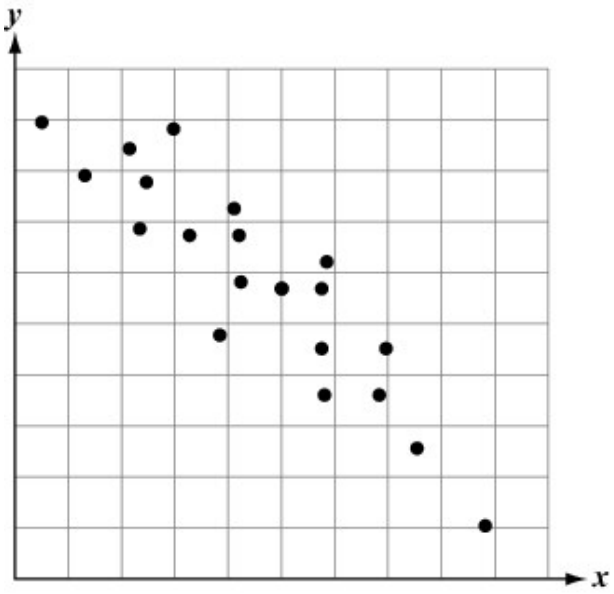
A. The mean number of points scored was 30.
B. The mean amount of time played was 30 minutes.
C. The three players who scored the most points played the longest time.
D. The three players who scored the least points played the shortest time.

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

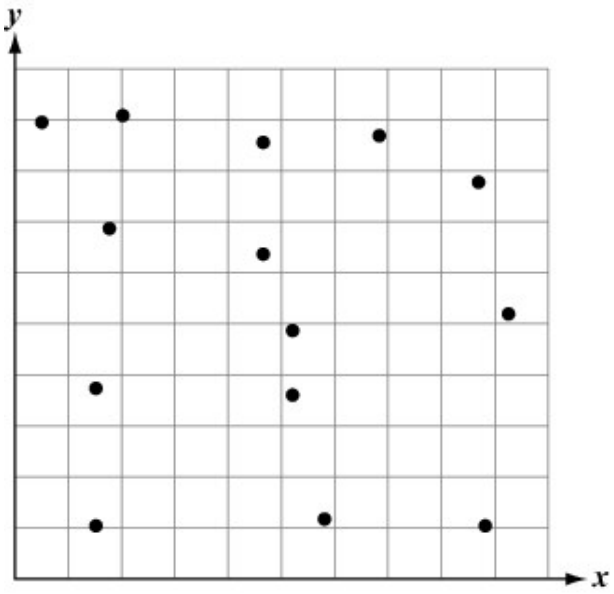
A.



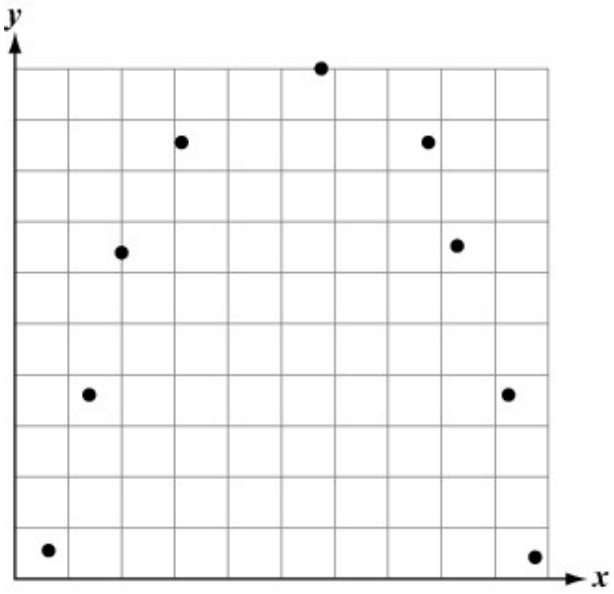
B.



C.

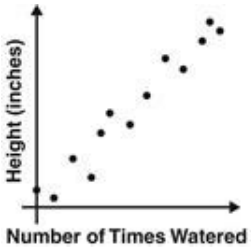


D.

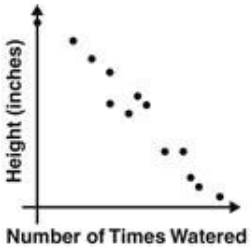


107. **Gary conducted an experiment. He found that the more often he watered sunflower plants, the taller the plants grew. Which graph below shows the same kind of relationship as Gary's data?**

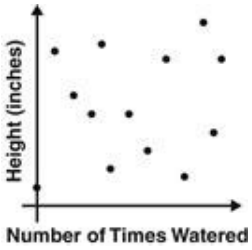
A.



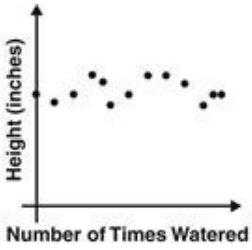
B.



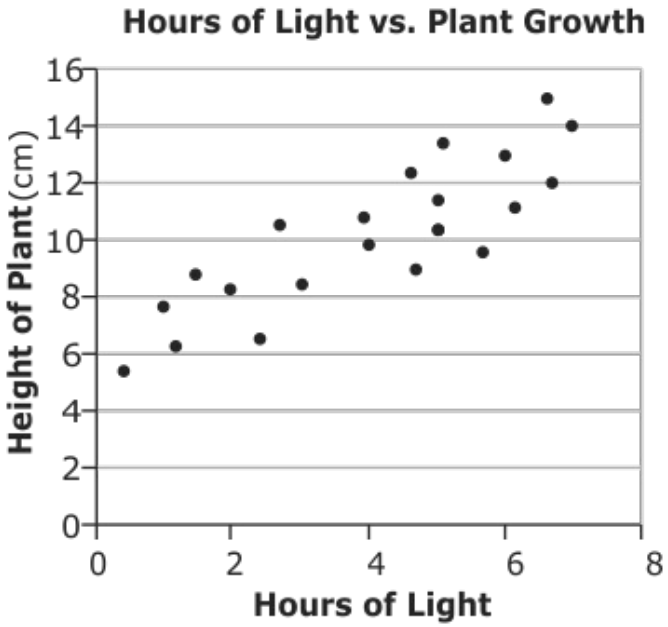
C.



D.



108. Lily collected data on the heights of plants after several hours of direct light. Her data is plotted below.



What type of relation is shown between the hours of light and the heights of the plants?

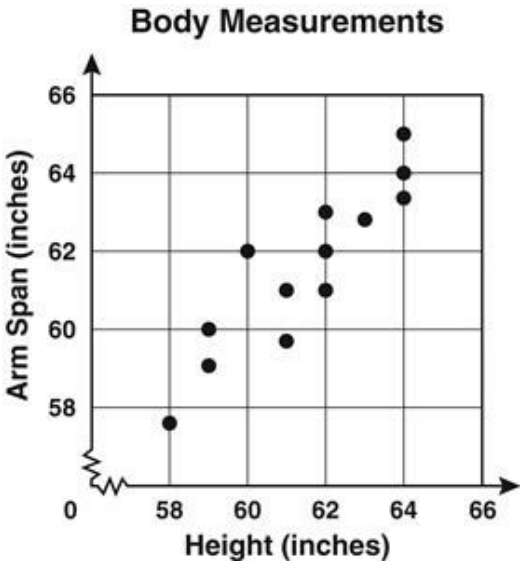
A. positive, linear relationship

B. negative, linear relationship

C. non-linear relationship

D. no relationship

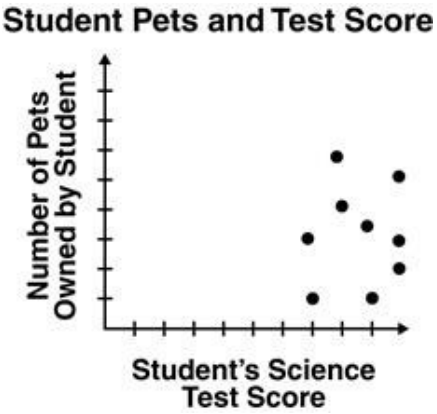
109. **Mrs. Larson recorded the heights and arm spans of the students in her science class. The results are shown on the scatterplot below.**



Based on the scatterplot data, which statement is true?

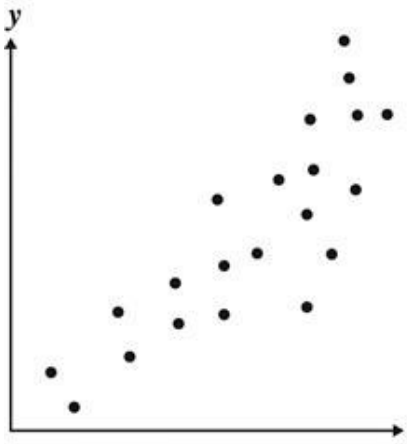
A. Most of the students are more than 61 inches tall.
B. Most of the students have an arm span of less than 61 inches.
C. The range of the measurements is 65 inches.
D. The maximum height is 65 inches.

110. **Which statement describes the relationship between the data sets displayed on the scatterplot?**



A. The number of pets owned by a student increases as the student's science test score increases.
B. The number of pets owned by a student decreases as the student's science test score increases.
C. The number of pets owned by a student remains the same as the student's science test score increases.
D. There is no relationship between the number of pets owned by a student and the student's science test score.

111. **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

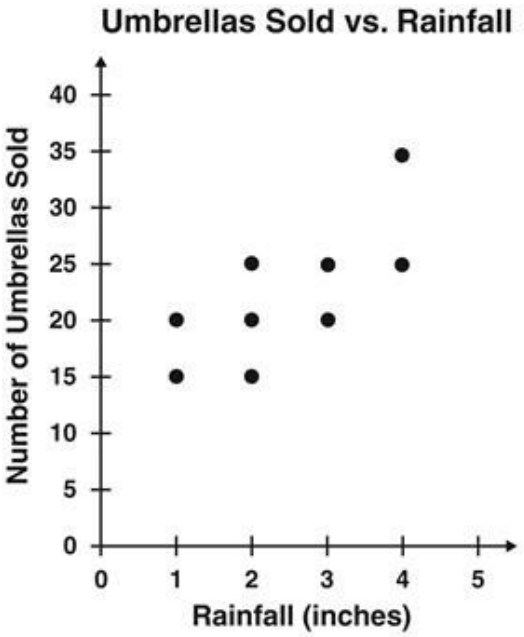
112. Which set of data would ***most likely*** show no correlation when graphed on a scatterplot?

A. number of pets and number of siblings
B. number of sunny days and umbrella sales
C. the age of a tree and the height of the tree
D. time spent studying and grades made in class

113. The points (0, 3), ($\bar{}$2, $\bar{}$7), ($\bar{}$6, $\bar{}$27), (6, 33), (4, 23), ($\bar{}$1, $\bar{}$2) were plotted on the coordinate plane. What type of association do these data have?

A. positive linear association
B. negative linear association
C. positive non-linear association
D. negative non-linear association

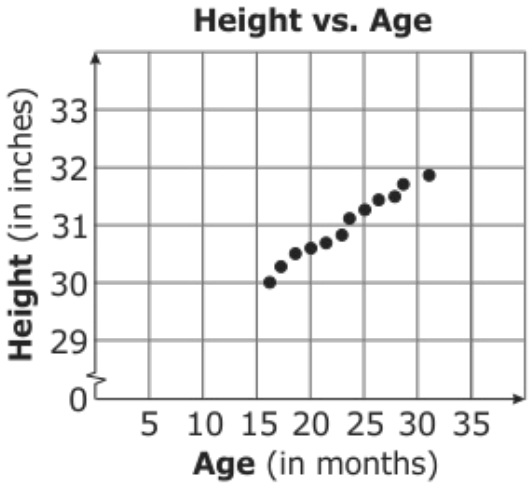
114. **The graph shows the number of umbrellas sold at a certain store relative to the amount of rainfall in the town per month.**



Based on the line of best fit, approximately how many umbrellas would be sold if there were 6 inches of rain?

A. 20
B. 35
C. 40
D. 45

115. The graph shows the heights and ages of several children.



Which statement describes the association between height and age?

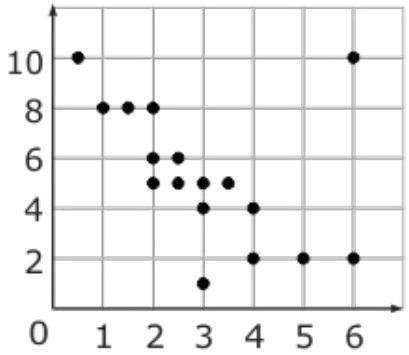
A. The graph shows no association between height and age.

B. The graph shows a positive association between height and age.

C. The graph shows a negative association between height and age.

D. The graph shows a constant association between height and age.

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



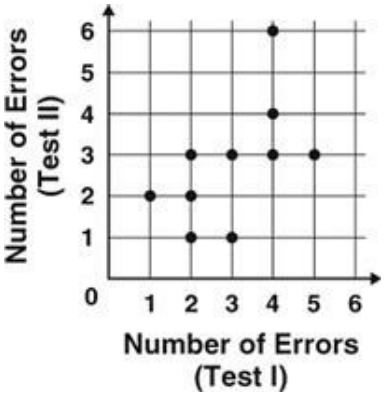
A. (0.5, 10)

B. (3, 1)

C. (6, 2)

D. (6, 10)

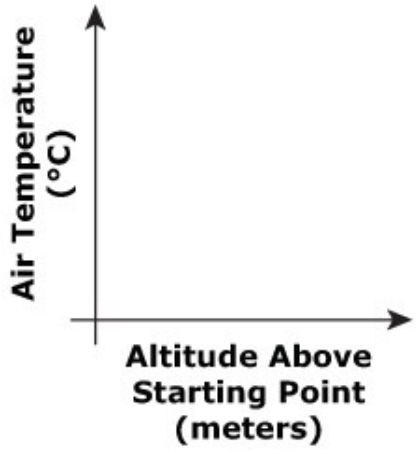
117. **Ten students took Keyboarding Test I and then took Keyboarding Test II. The number of errors on each test was recorded. Each point on the graph below represents a student's results on the 2 tests.**



How many of the students made fewer errors on Test II than on Test I?

A. 3
B. 4
C. 5
D. 7

118. Three mountain climbers started climbing a mountain at the same time and place. The climbers stopped at different points to record their increasing altitude and the decrease in the air temperature. When all three climbers reached the top of the mountain, they plotted their data on the set of axes shown.



Which type of correlation should their data have?

A. undefined correlation
B. negative correlation
C. positive correlation
D. zero correlation

119. When graphed, which set of data shows a positive relationship?

A.

x	2	3	4	5	6
y	1	4	7	-1	-3

B.

x	-5	-3	-1	1	3
y	8	4	4	1	-5

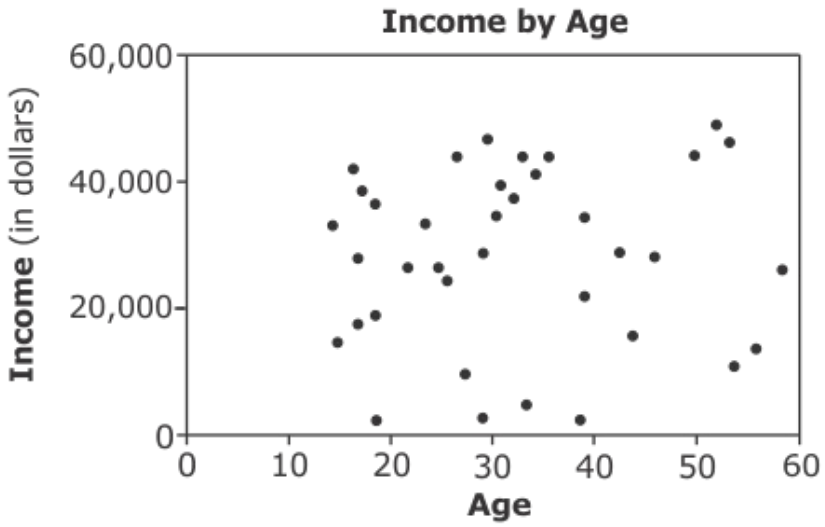
C.

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

D.

x	-5	-4	-3	-2	-1
y	4	-2	8	-4	6

120. The scatterplot below compares yearly income to age.



What kind of association is shown?

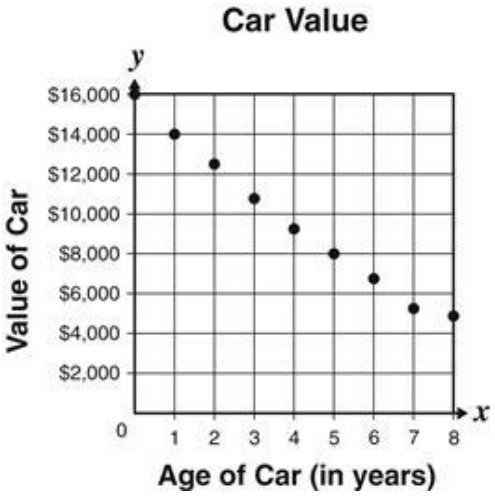
A. positive association

B. negative association

C. irrational association

D. no association

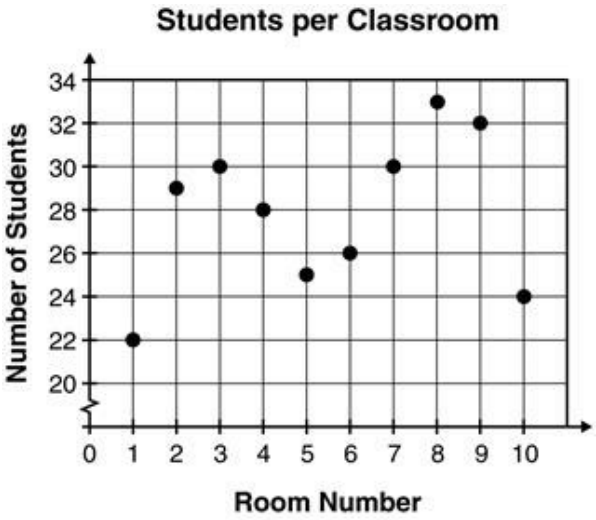
121. **The graph shows the value of a car at the time of purchase and after each of the next 8 years.**



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.

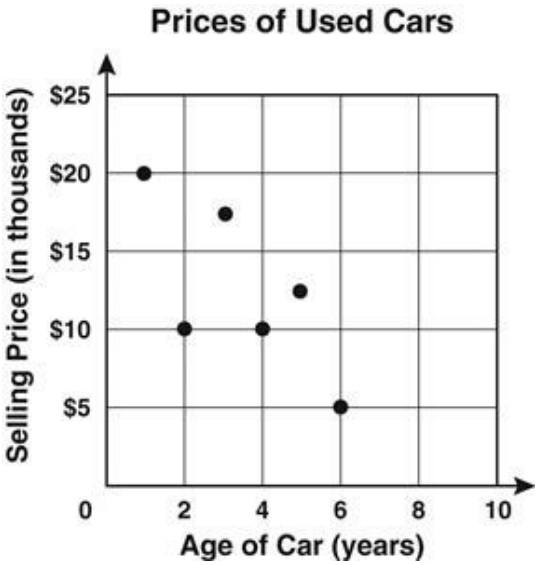
122. **The graph below shows the number of students in 10 classrooms at Park Elementary School.**



Which classroom has the fewest number of students?

A. 1
B. 5
C. 6
D. 10

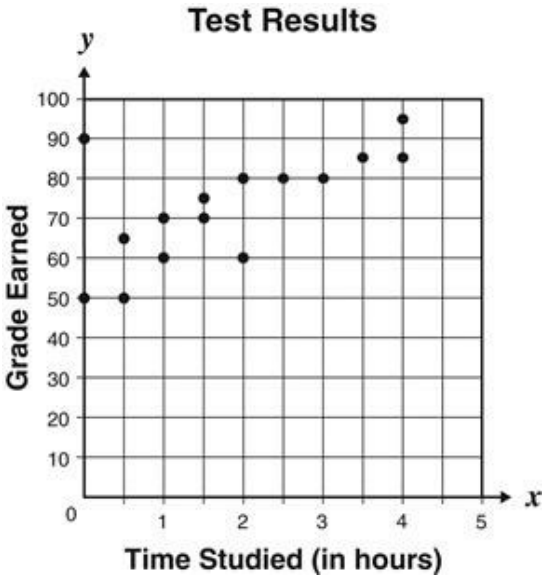
123. **A used-car dealer kept records of the selling price of his used cars in 2005. The scatterplot shows the average selling price of his used cars based upon the age of the used car.**



What is the range of the selling price data?

A. $20,000
B. $15,000
C. $12,500
D. $5,000

124. **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.

125. The table below shows the height of several students at different ages.

Student	**Height at 1 year** (inches)	**Height at 14 years** (inches)
1	30.5	66
2	31	70
3	29	65
4	28	63
5	29	64
6	26.5	62.5
7	27	63

Which statement is true about the pattern of association between height at 1 year and height at 14 years?

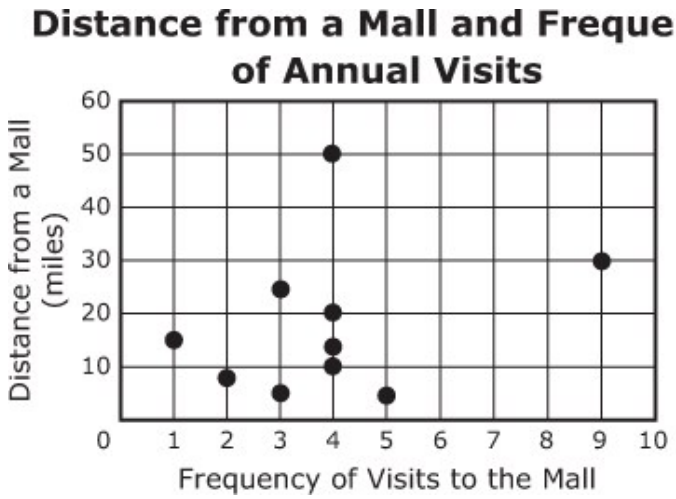
A. negative with no outliers

B. negative with an outlier

C. positive with no outliers

D. positive with an outlier

126. A survey was conducted to see if the distance a person lives from a new mall has any effect on how frequently the person visits the mall per year. The results of ten people who completed this survey are shown in the following scatter plot.



Which conclusion is **best** supported by the results shown in the scatter plot about people who live less than 30 miles from this mall?

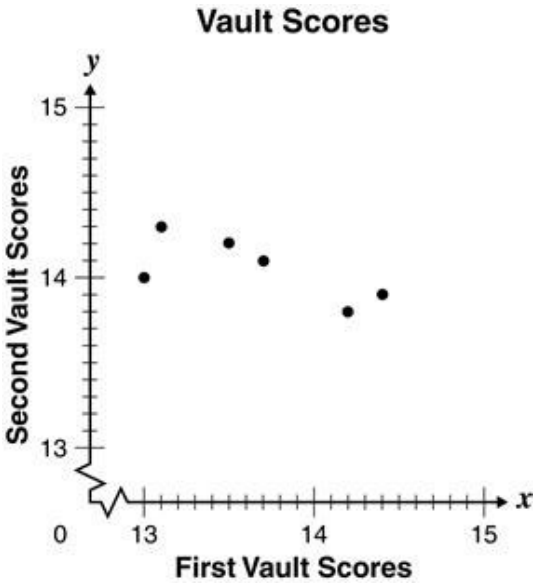
A. They are likely to visit the mall 4 times or less per year.

B. They are likely to visit the mall 9 times or more per year.

C. They will visit less frequently than a person who lives 50 miles away.

D. They will visit more frequently than a person who lives 30 miles away.

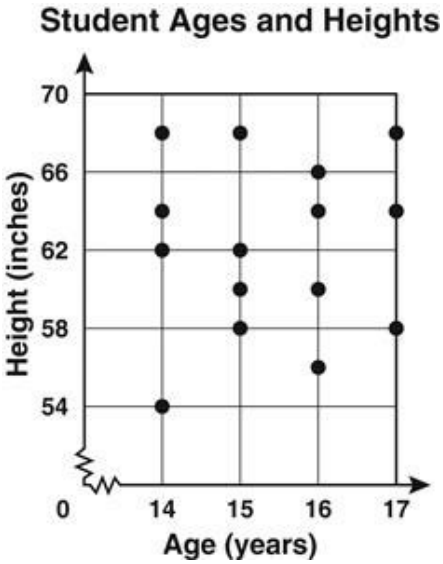
127. **Each of six pole vaulters performed two vaults and received a score on each vault. The scatterplot shows each pole vaulter's scores; each point represents one pole vaulter.**



Which conclusion about the pole vaulters' scores is true?

A. The higher a pole vaulter's first vault score, the higher the pole vaulter's second vault score.
B. The lower a pole vaulter's first vault score, the higher the pole vaulter's second vault score.
C. More than half of the pole vaulters scored higher on the first vault than on the second vault.
D. More than half of the pole vaulters scored higher on the second vault than on the first vault.

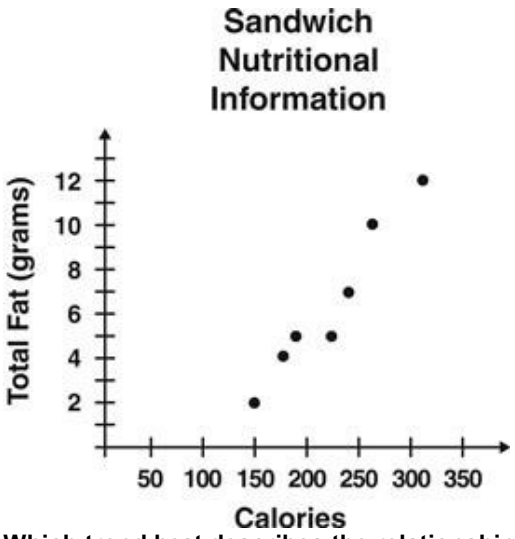
128. **The scatterplot below shows the ages and heights of 15 students in a physical education class.**



According to the scatterplot, what percent of the total number of students are taller than 60 inches?

A. 90%
B. 73%
C. 60%
D. 40%

129. **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.

130. A scatter plot shows a negative linear relationship between the time spent reviewing a writing assignment and the number of spelling mistakes on it. The following statements describe possible relationships between the variables.

I. As the review time decreases, the number of spelling mistakes increases.

II. As the review time increases, the number of spelling mistakes increases.

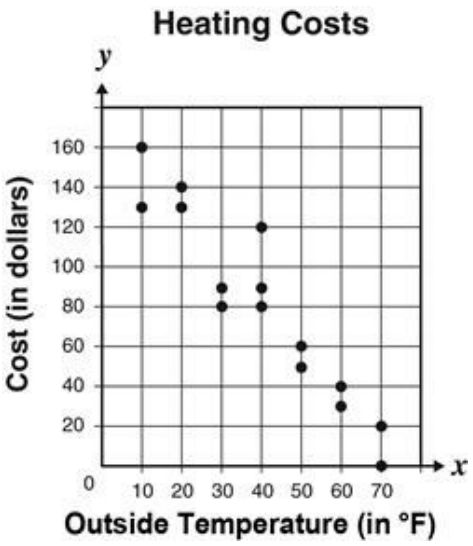
III. As the review time decreases, the number of spelling mistakes decreases.

IV. As the review time increases, the number of spelling mistakes decreases.

Which of these statements are **correct**?

A. only IV
B. only III
C. II and III
D. I and IV

131. **Home heating costs and outside temperatures for 15 families are shown in the scatterplot below.**



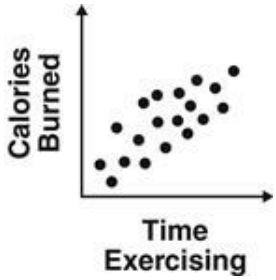
Which statement best describes these data?

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.

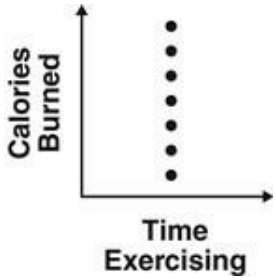
132. **Which graph best illustrates this statement?**

The more time spent exercising, the more calories burned.

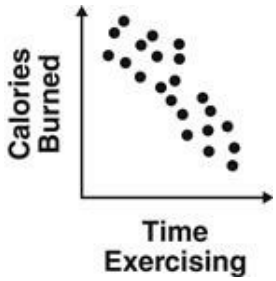
A.



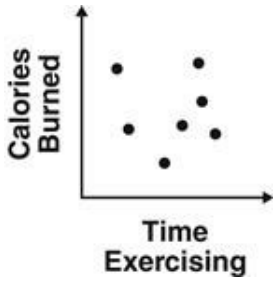
B.



C.



D.



133. When graphed on a scatterplot, which set of data would ***most likely*** show a positive correlation?

A. shoe size and weight of a person

B. day of the week and temperature

C. cost to heat a house and outside temperature

D. amount of income earned and years of education

134. Which situation would ***most likely*** have a scatterplot with a negative correlation?

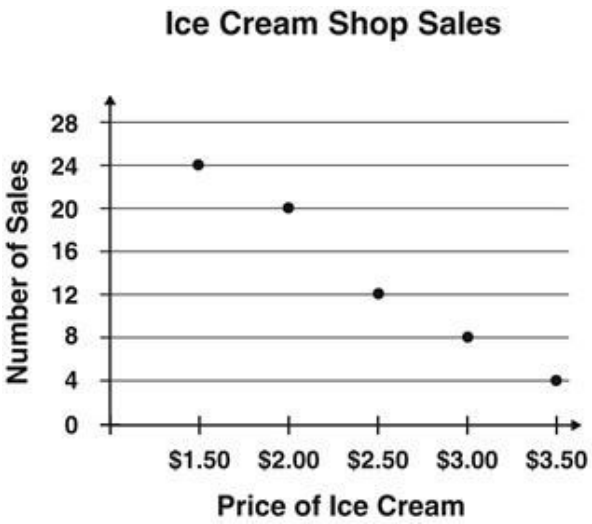
A. age of a baby and weight of that baby

B. outside temperature and cooling costs

C. amount of air in a balloon and size of balloon

D. number of questions missed on a test and test grade

135. **The graph shows the sales at an ice cream shop.**



Which statement is supported by the data in the graph?

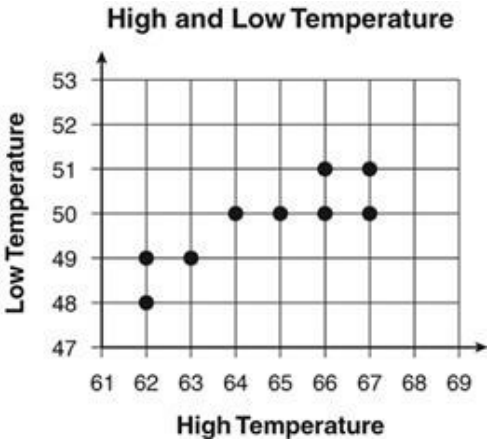
A. Lower priced items have higher numbers of sales.

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.

136. **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.

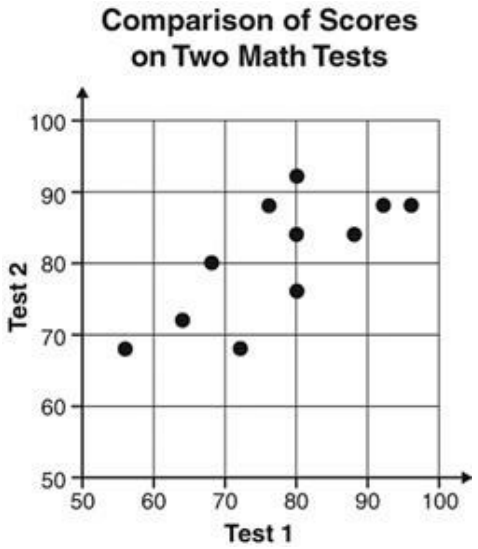
137. The table below shows the age of a car and its value.

Age of Car (Years)	1	2	3	4	5
Value of Car ($)	15,000	13,500	12,500	11,000	9,000

What type of association is shown between the car's age and its value?

A. positive
B. negative
C. none

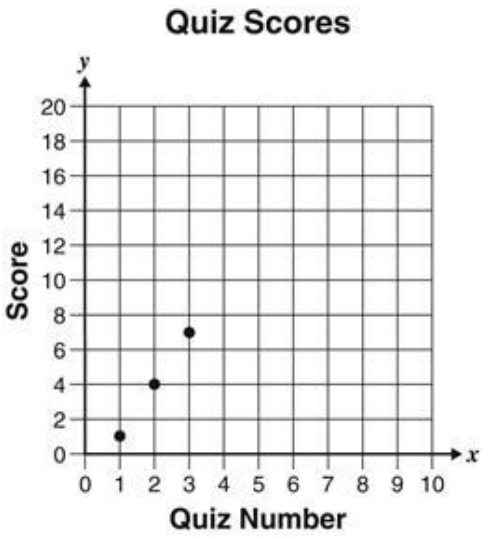
138. **Mrs. Patillo wanted to know whether there was a relationship between two sets of her students' test scores. The scatterplot below shows the scores of her students.**



Which statement best describes the relationship?

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

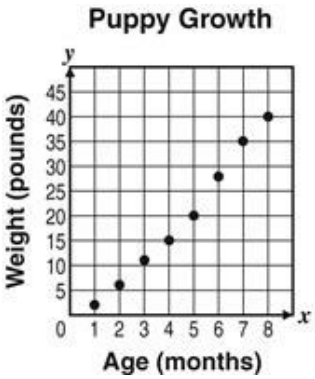
139. **Adrian showed his improvement on quizzes by plotting his quiz scores on the graph below.**



If Adrian continues to improve his scores at the same rate, what score can he expect on Quiz number 6?

A. 10
B. 13
C. 16
D. 21

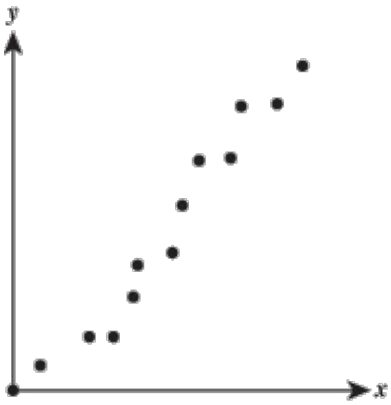
140. **Nhuy recorded the weight of her puppy as it grew over several months. She recorded the weights on the graph below.**



According to this graph, how many pounds did her puppy weigh when it was 5 months old?

A. 2
B. 11
C. 20
D. 35

141. The scatter plot below shows the association between two variables.



Which two variables are most likely to have the association displayed by the scatter plot?

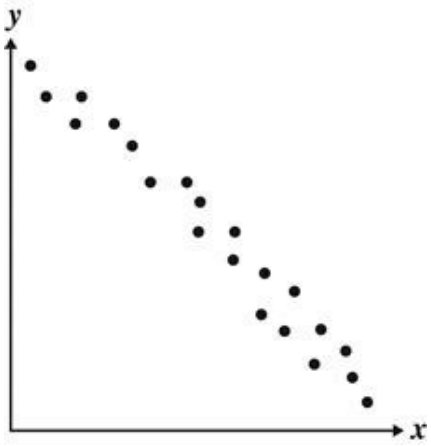
A. An animal's height and the number of legs it has.

B. The day of the month on which a person was born and the person's height.

C. The number of hours a person works and the amount of tips the person earns.

D. The number of hours a person spends studying and the number of hours the person spends doing other activities.

142. **Data on a scatterplot is shown below.**

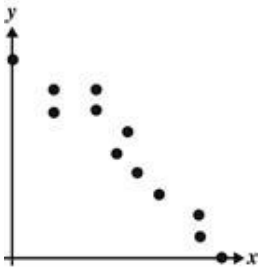


Which statement best describes the correlation between *x* and *y*?

A. low positive
B. high positive
C. low negative
D. high negative

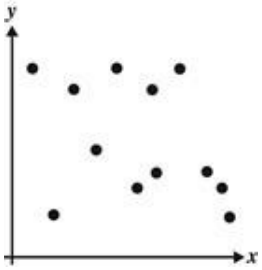
143. **The results of four experiments are shown. Which results appear to show a positive correlation between the two variables?**

A.

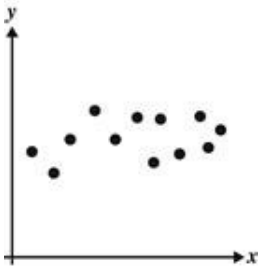


B.

C.



D.

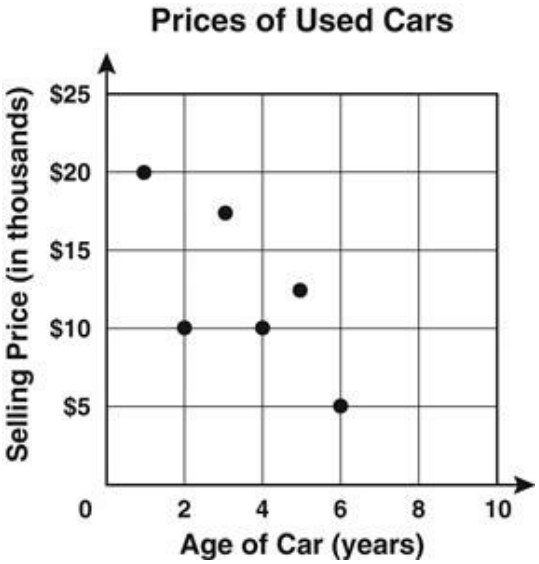


144. **The graph shows Doreen's jogging plan for five consecutive days.**

Based on this graph, what is the best prediction for how many miles she will jog on the seventh day?

A. 5.5
B. 6.5
C. 8
D. 10

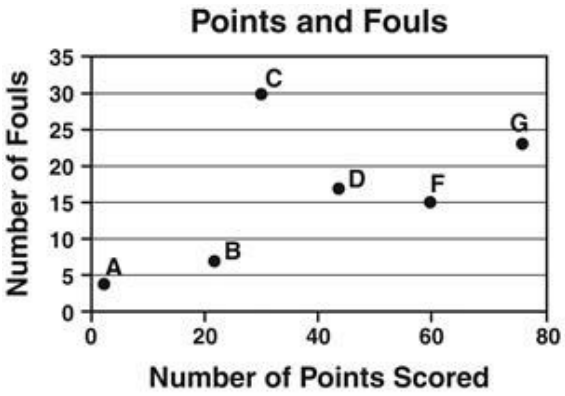
145. **A used-car dealer kept records of the selling price of his used cars in 2005. The scatterplot shows the average selling price of his used cars based on the age of the used car.**



Using the graph, which is the closest to the selling price of an 8-year-old car?

A. $7,500
B. $5,000
C. $2,500
D. $500

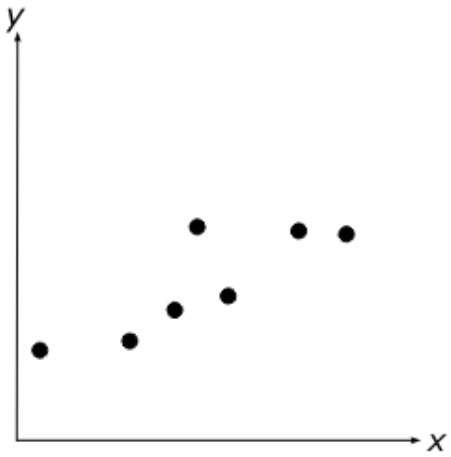
146. **The scatterplot below shows the number of fouls made and points scored by 6 different players on a basketball team.**



Which player scored the same number of points as number of fouls made?

A. Player A
B. Player C
C. Player D
D. Player G

147. Which association ***most closely*** represents the scatterplot below?



A. nonlinear association
B. linear association
C. outlier association
D. no association