

1. Which of the following functions are linear?

A. $y = 4^2x$

B. $y = -7x^2 + 8$

C. $y = \frac{1}{2}x - 3.5$

D. $y = 3x^2 + 2x - 1$

E. $y = 3^2x$

F. $y = (5x - 1)^2$

2. The table below shows the item cost and the shipping cost of for four customers.

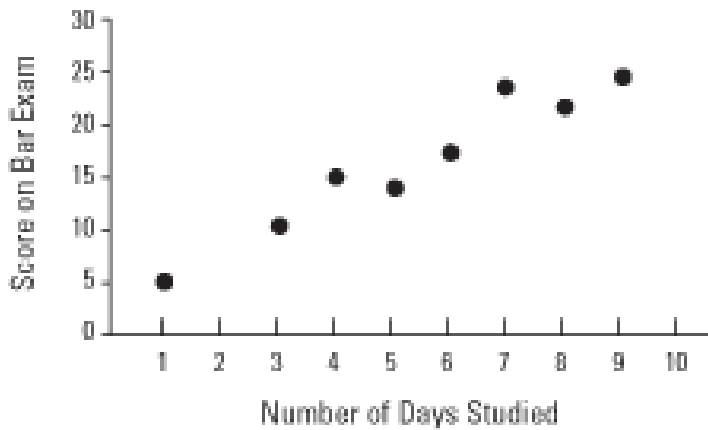
Shipping Costs for Items

Total cost of items	Shipping costs
\$25	\$5.99
\$45	\$8.99
\$50	\$8.99
\$70	\$10.99

Which pattern of association **best** describes the relationship between the item cost and the shipping cost?

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

3. Which equation best represents the data shown in the scatter plot below?



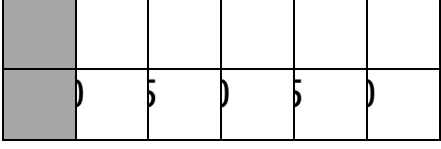
- A. $y = \frac{1}{5}x + 2$
B. $y = -5x + 1$
C. $y = \frac{-1}{2}x + 5$
D. $y = 2x + 2$
4. A total of 300 students were surveyed about how they traveled to school. The results are shown in the relative frequency table.

School	Method			TOTAL
	Car	Bus	Other	
Middle School	0.18	0.14	0.10	0.42
High School	0.38	0.12	0.08	0.58
TOTAL	0.56	0.26	0.18	1.00

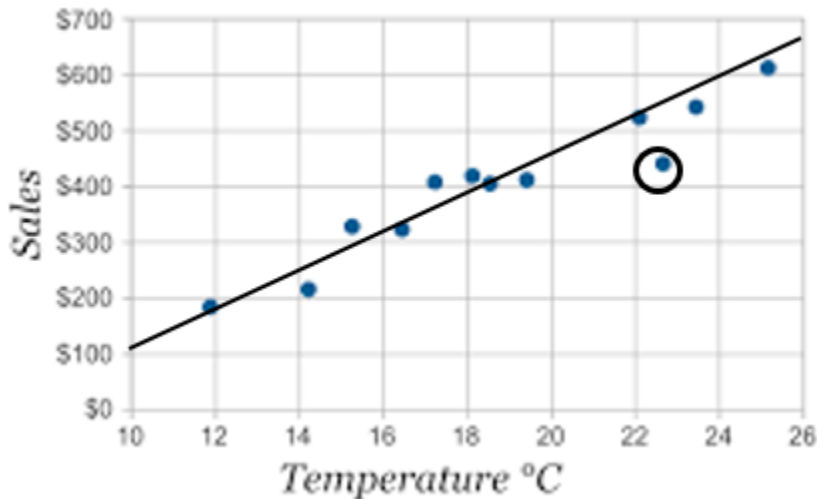
Which statement is correct?

- A. 168 students travel by car.
B. 18 students travel in another way besides car or bus.
C. 126 students travel by bus.
D. 174 students surveyed were in middle school.

5. Compare the two linear functions. Select which has the greater rate of change and which has the greater initial value.

	Rate of Change	Initial Value
Function 1 	<input type="radio"/>	<input type="radio"/>
Function 2 $y = -4x + 4$	<input type="radio"/>	<input type="radio"/>

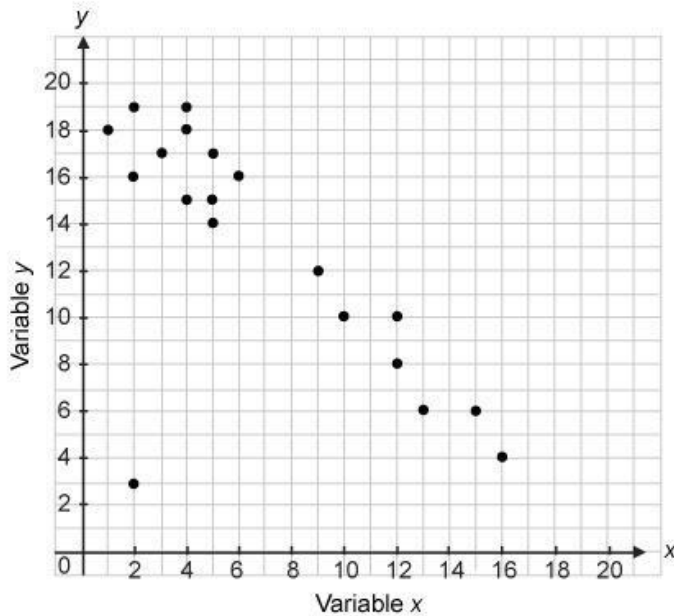
6. This scatter plot and line of best fit show the relationship between the temperature and ice cream sales at 12 schools. The circled point in the scatter plot corresponds to the Smartville School. What conclusion can be drawn about the predicted ice cream sales and the actual ice cream sales at the Smartville School?



- A. The sales at the Smartville School is exactly what is predicted by the line of best fit.
- B. The sales at the Smartville School is greater than what is predicted by the line of best fit.
- C. The sales at the Smartville School is less than what is predicted by the line of best fit.

D. The difference between the predicted sales and the actual sales is less than any other temperature.

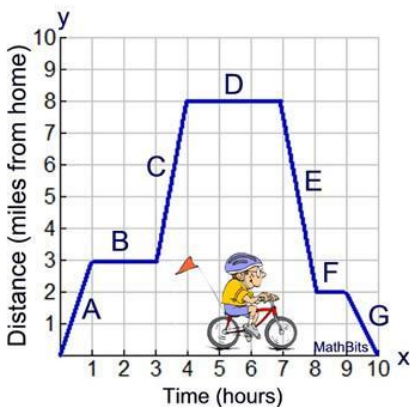
7. A scatter plot below shows the relationship between two variables, x and y .



Select all statements that correctly interpret the relationship shown on the scatter plot.

- A. There are no outliers for the data.
- B. The data shows no relationship between the variables.
- C. The data shows a linear association between the variables.
- D. The data shows a positive correlation between the variables.
- E. The data shows a negative correlation between the variables.

8. Carlos rode his bike Saturday as shown in the graph below.



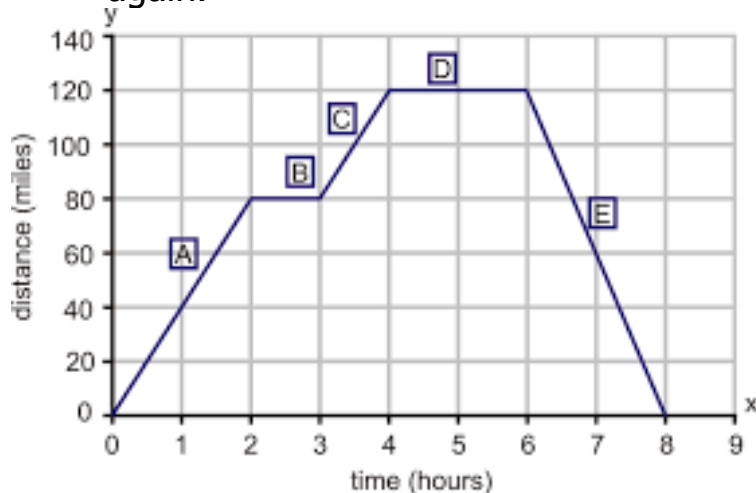
Select all statements that are true based on the graph shown.

- A. Carlos stopped riding his bike for 6 hours.
- B. Carlos traveled 8 miles from home.
- C. Carlos was away from home for 20 hours.
- D. After 7 hours, Carlos rested.
- E. Carlos began his ride home after 7 hours.

9. Trinity has graphed the function $y = -3x - 12$ on coordinate plane. Which of the following statements is true for the function Trinity graphed?

- A. It has a slope of -12.
- B. It has a y-intercept of -12.
- C. It has a positive correlation.
- D. It assigns more than one output for an input.

10. Nelson travels from home to visit his grandmother and back home again.



What statement best represents portion B of the trip?

- A. Nelson walks for an hour.
- B. Nelson waits one hour at a bus stop.
- C. Nelson travels 80 miles an hour.
- D. Nelson spends an hour on a bridge.

11. Thirty parents completed forms regarding their children biking to school. The table shows the results.

Biking to School			
	Can Bike	Can't Bike	Total
Boys	7	4	11
Girls	9	10	19
Total	16	14	30

How many more girls can't bike to school than boys?

- A. 9
- B. 4
- C. 10
- D. 6

12. The equation $y = 86x + 1250$ represents the relationship between the total cost, in dollars, y , to have a senior dance, and the number of seniors attending, x .

Which of the following statements is true about the equation?

- A. The slope is 86 and represents the cost per senior to attend.
- B. The y-intercept is 1250 and represents the total cost.
- C. The slope is 1250 and represents the initial cost.
- D. The y-intercept is 86 and represents the cost per senior to attend.

13. The table below contains the data on how many IXL questions students answered in Mr. Scott's fifth period class.

The equation of the line of best fit for the data is $y = 29.2x + 4.9$.

Periods	Questions Answered
1	30
3	110
4	110
3	85
2	65
2	60
5	145
2	55

Which **two** statements accurately describe the slope for the line of best fit?

- A. If a student works on IXL for one period longer than another student, they will have answered approximately 29.2 more questions.
- B. If a student starts working faster, they will answer 29.2 more questions in each additional period they work on IXL.
- C. For each additional period spent on IXL, approximately 4.9 additional questions will be answered.

D. The most questions that any student answered is 4.9 per period.

E. About 29.2 IXL questions were answered each period.