Algebra 1 Day 8 Blizzard Bag
Complete all problems, showing all of your work.

1)   The cost of production, C, of producing x number of electronic goods in one year is modeled by the equation $C = 145x + 1250$. What does the slope in this situation represent?

     a)   the cost of production per unit
     b)   the number of units produced
     c)   the total cost of production
     d)   the initial setup cost

2)   The mean number of books sold at a bookstore in a two-week period is 34. If the number of books sold each day is increased by 4 for the next two weeks, what is the new mean for the books sold in the four-week period?

3)   The box-and-whisker graph below represents the prices of 20 different brands of backpacks.

Prices of Backpacks (dollars)
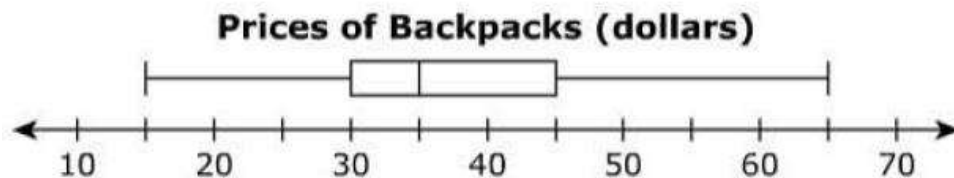
Which statement is supported by the graph?
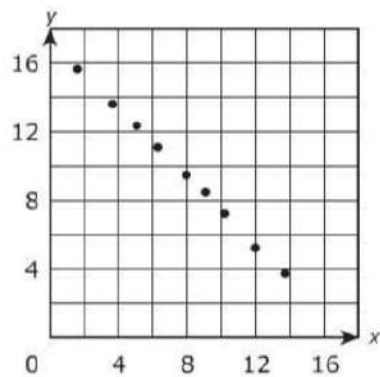
     a)   The least price is $30.
     b)   The greatest price is $45.
     c)   The median price is $35.
     d)   The prices are between $35 and $45.

4)   On a science test, Susan's score was 12 more than two times Jennifer's score. The sum of Susan and Jennifer's scores is 78. How much did Jennifer score?

5)   Which graph shows a positive linear relationship between the variables x and y?
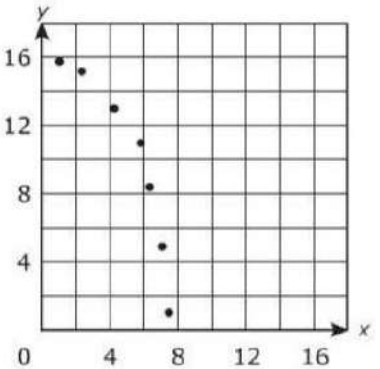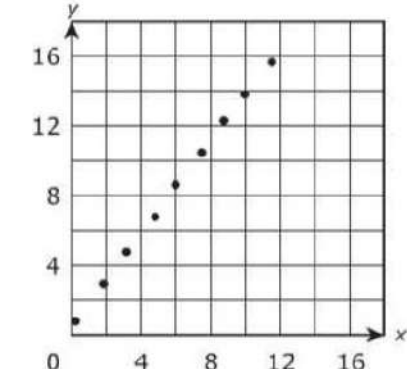
a)
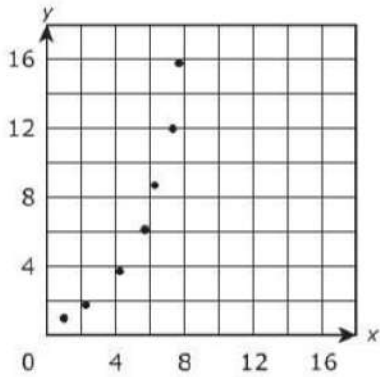
b)

c)

d)

6)   Sylvia recorded the total time of her daily commute each day for the last two weeks. She made the graph of her data shown below.

Which statement is supported by the data in the graph?

a)   The mean time Sylvie took to commute is 58 minutes.

b)   The mode time Sylvie took to commute is between 46 and 50 minutes.

c)   Sylvie took between 71 and 75 minutes commuting for $\frac{1}{5}$ of the total number of days.

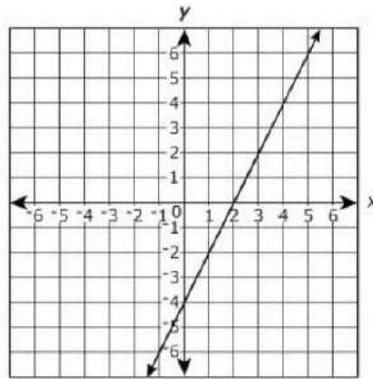d)   Sylvie took between 46 and 50 minutes commuting for more than $\frac{2}{5}$ of the total number of days.

Sylvie's Daily Commute

Time of Commute (minutes)
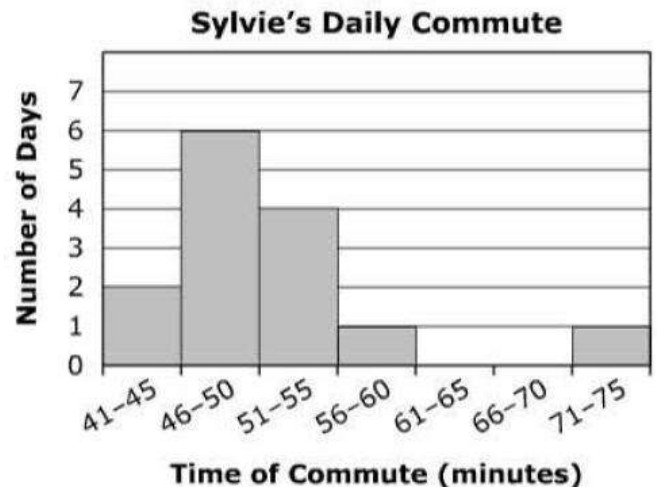
7) Which graph represents a relation that is also a function?

a)
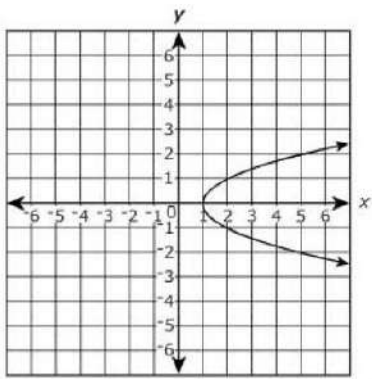
b)

c)
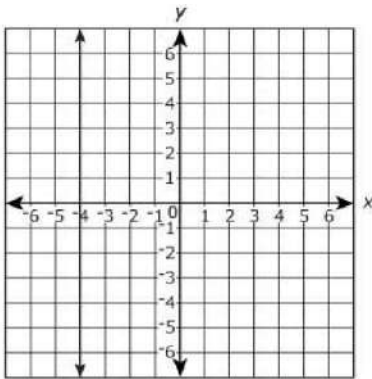
d)
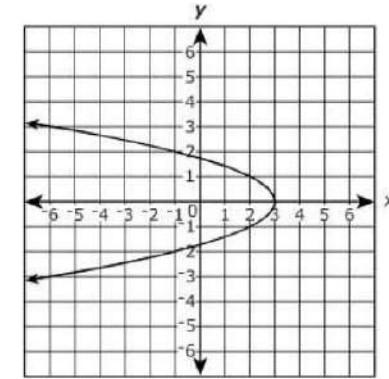
8) The table below shows shoe sales each month for six months.

Shoe Sales

Month	1	2	3	4	5	6
Pairs Sold	73	82	105	97	112	142

Find the equation for the line of best fit. Using the line of best fit, find the best prediction for the number of pairs of shoes sold in the eighth month.

9) The age, in years, of employees working in a company are given below.

24, 28, 23, 35, 55, 45, 47, 51, 29, 33

If the eldest employee resigns, how will this affect the median age of the employees of the company?

    a)   The median age decreases by 1 year.
    b)   The median age decreases by 2 years.
    c)   The median age decreases by 5 years.
   d)   The median age remains unchanged.

10) Solve $|3x - 5| \leq 10$.

11) Sarah rents a banquet hall for her catered dinner party. The equation $y = 32x + 400$ represents her charges, y, for x number of guests. What is represented by the slope in this equation?
   a) the number of guests
   b) the catering charge per guest
   c) the rental fee of the banquet hall
   d) the total charge for the dinner party

12) Write an equation to represent the line graphed at the right.

13) State the domain and range of the relation below.
   {(1, -2), (4, 5), (2, -4), (6, 5), (2, 2)}
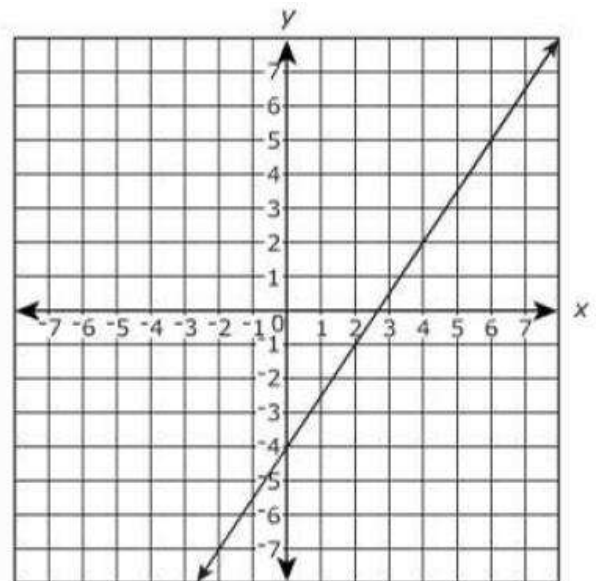
14) The table at right shows the amount, A, earned by John for tutoring h hours. On a particular week, he tutored for 15 hours. How much did he earn that week?

Amount Earned Tutoring

Hours, h	Amount earned, A
1	$12
3	$36
7	$84
10	$120

15) Subtract $(y^3 + 5y^2 - 3y) - (2y^2 - 4y + 1)$.

16) The table at right shows the relationship between the number of years sincec 2006 and the amount of money collected for an annual community fundraiser.

Find the equation of the line of best fit. Then use that equation to predict the amount of money that will be collected in 2014.

Community Fundraiser

Years Since 2006	Amount Collected
0	$185
1	$325
2	$270
3	$295
4	$450
5	$515

17) Solve -2x + 28 > 66 or -8x + 20 < -4.

18) What is the value of $f(t) = 4t^2 - 2t - 7$ when t = -4?

19) Which table best describes the function y = -3x + 7?

a)

x	y
0	7
2	-6
4	-12
6	-18

b)

x	y
0	7
2	4
4	1
6	-2

c)

x	y
0	7
2	1
4	-5
6	-11

d)

x	y
0	7
2	13
4	19
6	25

20) A researcher recorded data on the temperature change, in degrees Fahrenheit, of a cold liquid placed in a drinking class. The graph at the right shows the result. Calculate the rate of change of the temperature of the liquid.

Temperature Change of a Cold Liquid
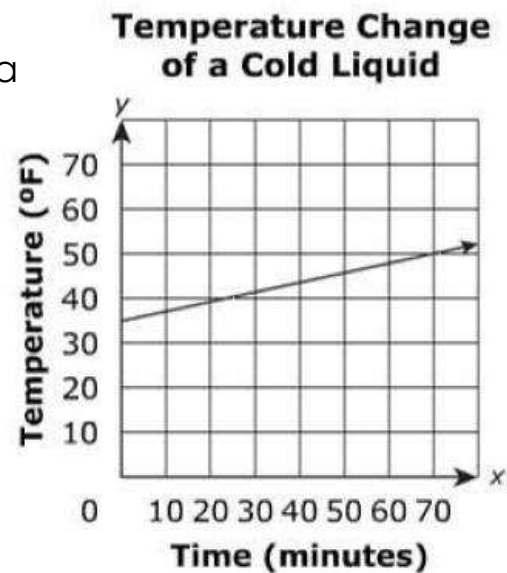
21) Chris and Jasmine are packing a bushel's worth of tomatoes into containers that hold 10 tomatoes each. The remaining number of tomatoes in the bushel is modeled by the equation y = 285 – 10x, where x represents the number of containers filled with tomatoes. Which table best represents the relationship between x and y?

a)

A Bushel of Tomatoes

Number of Containers, x	Remaining Number of Tomatoes, y
2	265
4	245
6	225
8	205

b)

A Bushel of Tomatoes

Number of Containers, x	Remaining Number of Tomatoes, y
2	283
4	281
6	279
8	277

c)

A Bushel of Tomatoes

Number of Containers, x	Remaining Number of Tomatoes, y
2	281
4	277
6	273
8	269

d)

A Bushel of Tomatoes

Number of Containers, x	Remaining Number of Tomatoes, y
2	285
4	275
6	265
8	255