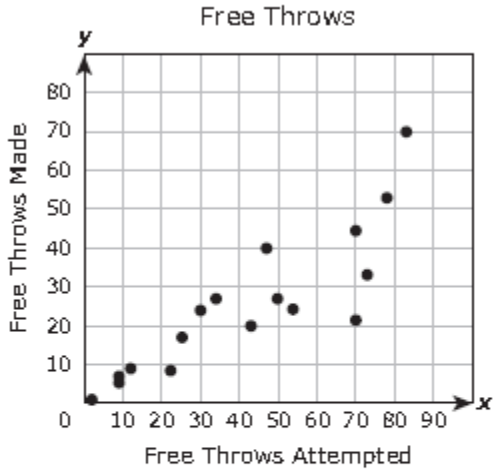
Name: _____

Mixed Review – Fourth Six Weeks Extra Credit

Directions: Complete every question with correct work shown to receive full credit. Full credit counts as two extra credit homework grades in the fourth six weeks.

Due Date: Wednesday, February 11, 2015

1. The scatterplot shows the number of free throws that different basketball players attempted and the number that each player made.



Based on the trend in the data, approximately how many free throws would a player be expected to make if he attempted 60 free throws?

F 50

G 35

H 25

J 60

2. Which table shows the same rate of change of y with respect to x as $y = 4 - \frac{5}{8}x$?

A

x	y
3	12
1	4
2	8
5	20

C

x	y
4	6.5
2	2.75
4	1.5
8	1

B

x	y
4	10.4
2	0.8
4	2.4
8	8.8

D

x	y
3	12
1	4
2	8
5	20

3. A college student needs 11 classes that are worth a total of 40 credits in order to complete her degree. The college offers both 4-credit classes and 3-credit classes. Which system of equations can be used to determine f, the number of 4-credit classes the student can take to complete her degree, and h, the number of 3-credit classes?

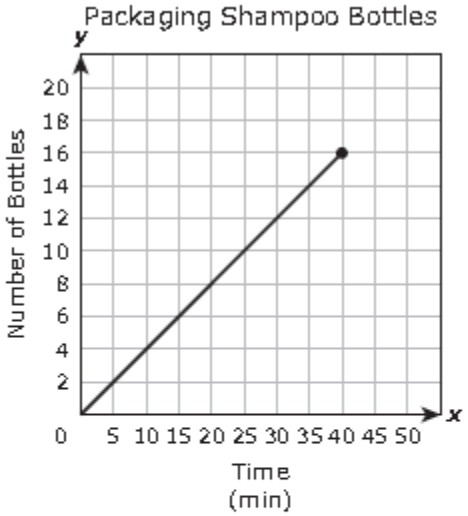
F $f + h = 40$
$4h + 3f = 11$

G $f + h = 11$
$4h + 3f = 40$

H $f + h = 40$
$4f + 3h = 11$

J $f + h = 11$
$4f + 3h = 40$

4. The graph shows the time it took a worker to package 16 bottles of shampoo.



The next day two workers packaged twice the number of bottles of shampoo in the same amount of time. If this new relationship is graphed on the same coordinate grid, which statement is true?

A The new graph would have a y-intercept at 80.

B The new graph would be steeper than the original graph.

C The new graph would be less steep than the original graph.

D The new graph would have a y-intercept at 8.

5. There are 156 laptops and desktop computers in a lab. There are 8 more laptops than desktop computers. What is the total number of laptops in the lab?

6. What is the value of x in the solution to the system of equations below?

$$15x - 12y = 13$$
$$30x + 9y = 4$$

A $-\frac{17}{3}$

B $\frac{1}{3}$

C $-\frac{2}{3}$

D $\frac{1}{6}$

7. The length, in feet, of a small train at an amusement park can be modeled by the function $f(c) = 9c + 14$, where c is the number of passenger cars attached to the locomotive. The original passenger cars were replaced, and the length of the train is now modeled by the function $h(c) = 12c + 14$. Based on this information, which statement describes the change in this situation?

F The locomotive is now 9 feet long, and the length of each passenger car remained the same.

G The locomotive is now 12 feet long, and the length of each passenger car remained the same.

H Each passenger car is now 9 feet long, and the length of the locomotive remained the same.

J Each passenger car is now 12 feet long, and the length of the locomotive remained the same.

8. Two functions are given below.

$$f(x) = -4x + 1$$
$$g(x) = -4x + \frac{1}{2}$$

How does the graph of f compare with the graph of g?

A The graph of f is less steep than the graph of g.

B The graph of f has the same y-intercept as the graph of g.

C The graph of f is parallel to the graph of g.

D The graph of f is steeper than the graph of g.

9. The table shows the functions used to determine the number of points earned every month by regular and elite members of a dining club who spend d dollars that month at participating restaurants.

Dining Club Points

Member Status	Points Earned
Regular	$r = 5d + 100$
Elite	$e = 8d + 200$

Which statement describes the difference in these situations?

F Regular members earn 3 more points for every dollar spent and are automatically awarded 100 more points per month than elite members.

G Regular members earn 3 more points for every dollar spent and are automatically awarded 200 more points per month than elite members.

H Elite members earn 3 more points for every dollar spent and are automatically awarded 100 more points per month than regular members.

J Elite members earn 3 more points for every dollar spent and are automatically awarded 200 more points per month than regular members.

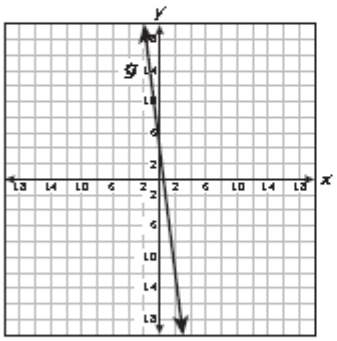
10. Which representation shows the same relationship as $g(x) = \frac{4}{3}(6x + 3)$?

A

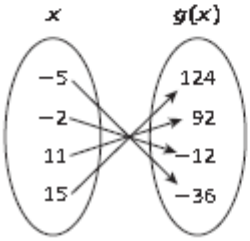
x	$g(x)$
28	3
12	1
−20	−3
−36	−5

B $g = \{(13, 108), (10, 94), (4, 36), (-3, -20)\}$

C

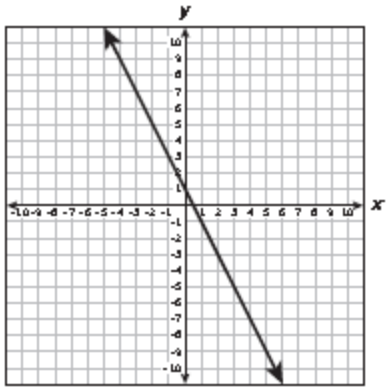


D

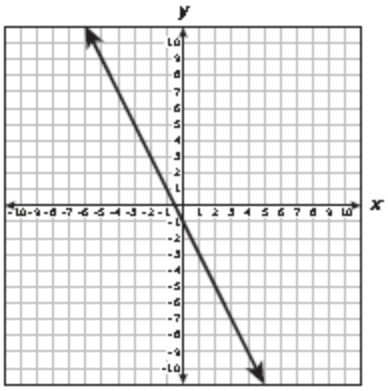


11. The slope and y-intercept of the line represented by $y = \frac{2}{5}x + \frac{3}{15}$ are both divided by $-\frac{1}{5}$ to create a new line. Which graph represents the new line?

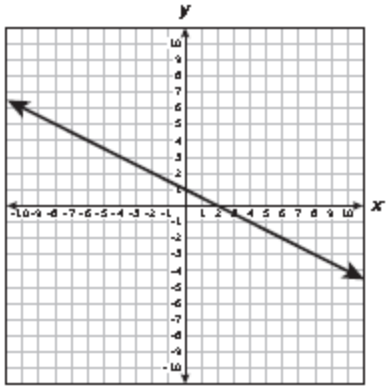
A



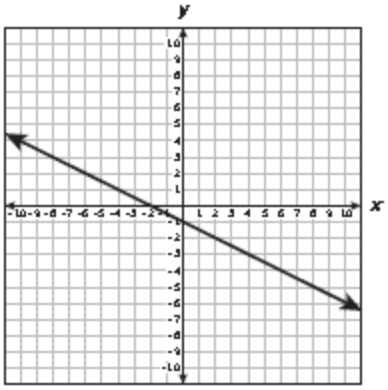
C



B



D



12. A boy has 380 prize tickets he wants to exchange for action figures at a prize booth. At this prize booth 5 tickets can be exchanged for a large action figure, and 7 tickets can be exchanged for 2 small action figures. The boy wants 4 times as many small action figures as large action figures. Based on this information, can the boy get 80 small action figures?

F No, because he would not have enough tickets for 20 large action figures

G Yes, because he would still have enough tickets for 320 large action figures

H No, because he would not have enough tickets for 320 large action figures

J Yes, because he would still have enough tickets for 20 large action figures

13. Which expression is equivalent to $\frac{z^a \cdot z^b}{z^c}$?

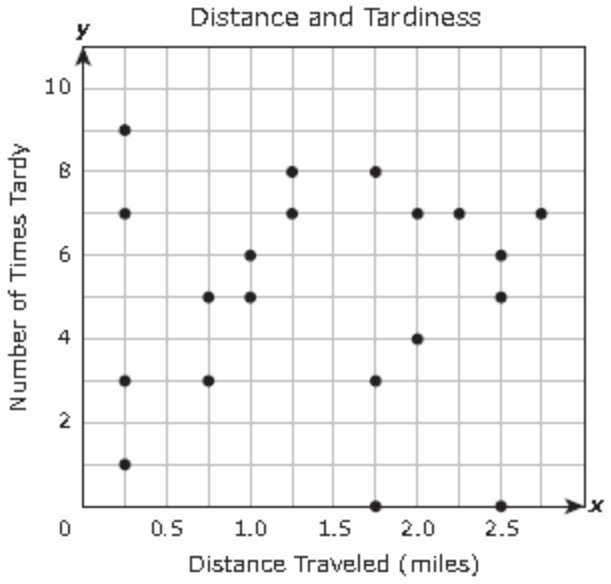
F $z^{(a-b-c)}$

G $z^{(a-b+c)}$

H $z^{(a+b-c)}$

J $z^{(a+b+c)}$

14. The scatterplot shows the relationship between the distance that students traveled to get to school and the number of times those students were tardy during the school year.



The principal of the school wants to use this information to help him determine if there is a correlation between distance traveled and the number of times tardy. Which statement is a reasonable conclusion that the principal could make?

A A student who travels 1.5 miles to get to school will be tardy 9 times during the school year.

B A student who travels more than 3 miles to get to school will be tardy at least 7 times during the school year.

C There is no correlation between the distance a student travels to get to school and the number of times the student will be tardy during the school year.

D There is a nonlinear correlation between the distance a student travels to get to school and the number of times the student will be tardy during the school year.

15. The cost of staying at a hotel can be found using the function $y = 129x + 9.95$, where x is the number of days a guest stays at the hotel and y is the cost in dollars. The cost includes a flat fee for Internet access. If the fee for Internet access is not included, which statement is true?

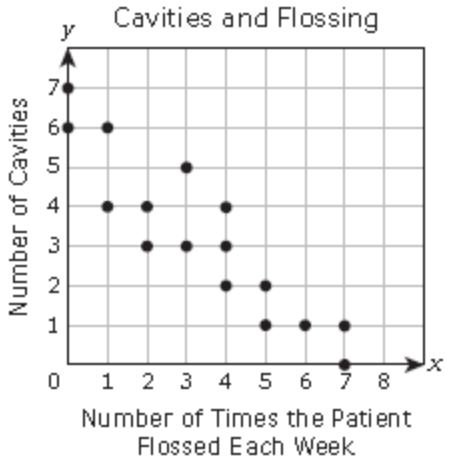
A The cost is $9.95 less per day.

B The cost is $9.95 less.

C The cost is $9.95 more per day.

D The cost is $9.95 more.

16. A dentist made the scatterplot below to show the number of cavities her patients had as it relates to the number of times they flossed their teeth each week.



Which of the following best describes the correlation for the data?

A Positive correlation

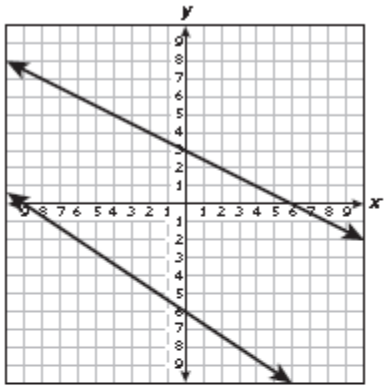
B Nonlinear correlation

C Negative correlation

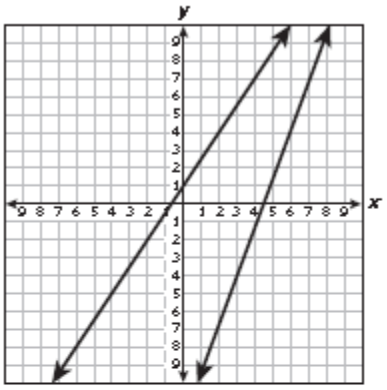
D No correlation

17. Which of the following graphs best represents a system of equations that has no solution?

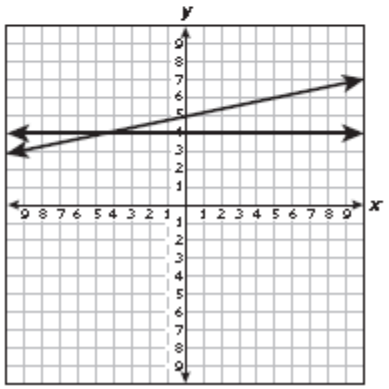
A



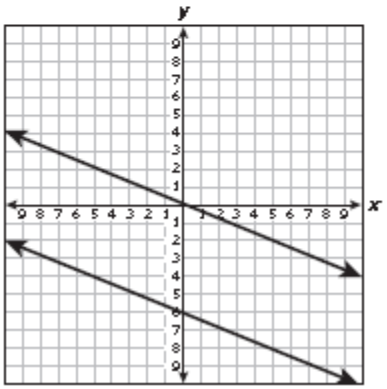
C



B



D



18. A painter charges $35 per hour for labor plus $40 for a ladder rental when he paints a house. The customer provides the paint. The total charge to paint a customer's house was $950. How many hours did the painter spend painting this house?

F $12\frac{2}{3}$ h

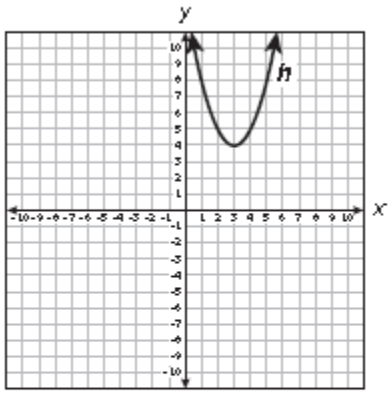
G 28 h

H 23 h

J Not here

19. The graph of the quadratic function h passes through the points $(-4, 32)$, $(3, 4)$, $(5, 14)$, and $(7, 32)$. Which of the following shows the same relationship as h?

A

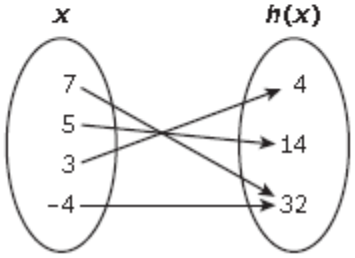


B $h(x) = x^2 + 3x + 4$

C

x	$h(x)$
32	-4
4	3
14	5
32	7

D



20. Students at a school will sell hats to raise money. There are some hats left over from last year, and 20 boxes of hats will be ordered this year. When the order arrives, the total number of hats the students will have can be determined using the function $f(x) = 48x + 37$, where x represents the number of boxes ordered. If the number of hats per box changes so that the situation is modeled by the function $h(x) = 24x + 37$, then how many fewer hats will the students have available to sell if they still order 20 boxes?