Directions: Answer the following question(s).

1 Simplify $13\left[6^2 \div \left(5^2 - 4^2\right) + 9\right]$

A. 585
C. 26
B. 169
D. 181

2 To which set of numbers does the number -18 belong?

A. Integers
C. Natural Numbers
B. Whole Numbers
D. Irrational Numbers

3 Evaluate the expression $\text{Evaluate } \frac{u}{z} + xy^2, \text{ for } u = 18, x = 2, y = 4, \text{ and } z = 3.$

A. 128
C. 70
B. 38
D. 196

4 You made two deposits to your bank account this month. One deposit was $20.29, and the second deposit was $15.84. You balance at the end fo the month is $72.31, and you made no withdrawals. Write an expression for your balance at the beginning of the month.

A. $\$72.31 + (\$20.29 - \$15.84); \$76.76$
C. $\$72.31 - \$20.29 - \$15.84; \$36.18$
B. $\$72.31 + \$20.29 + \$15.84; \$108.44$
D. $\$72.31 - (\$20.29 - \$15.84); \$67.86$

5 Simplify the expression. $\frac{9}{5} + \left(-\frac{6}{7}\right)$

A. $-\frac{3}{2}$
C. $\frac{33}{35}$
B. $\frac{93}{35}$
D. $-\frac{2}{3}$

Directions: Answer the following question(s).

6 Simplify the expression $\frac{7}{5} \cdot \frac{9}{10}$.

A. $\frac{5}{2}$

B. b. $\frac{2}{5}$

C. $\frac{63}{50}$

D. $\frac{23}{10}$

7 What is the value of $\frac{x}{y}$ when $x = -\frac{5}{8}$ and $y = \frac{8}{10}$?

A. -25/32

B. 13/18

C. -1/2

D. 25/32

8 Simplify the expression $\frac{1}{2}(44m + 16)$.

A. 176m + 8

B. 22m + 64

C. 22m + 16

D. 22m + 8

9 Hannah wants to buy a $470 camera. She can save $30 each week from her paycheck. However, before Hannah can buy the camera, she must give her brother $70 that she owes him. For how many weeks will Hannah need to save before she can pay back her brother and buy the camera?

A. 18 Weeks

B. 22 Weeks

C. 17 Weeks

D. 19 Weeks

10 Solve $2(y - 7) + 2 = 6$.

y = ☐

Directions: Answer the following question(s).

11 Solve the following Equation.

$$\frac{4p}{7} + \frac{28}{7} = 4$$

A. -14
B. 56
C. 4
D. 0

12 Solve the following equation.

$$5x + 6 = 6x + 2$$

x=

13 Solve the following equation

$$20 = -d + 10$$

d=

14 Solve the following equation

$$2(h + 7) - h = h + 14$$

A. -7
B. 7
C. No Solution
D. Infinitely Many

15 What equation do you get when you solve $u - q = u + yx$ for x?

A. $x = -\frac{q}{y}$
B. $x = -\frac{2u + q}{y}$
C. $x = -\frac{y}{q}$
D. $x = \frac{2u - q}{y}$

Directions: Answer the following question(s).

16 all real numbers greater than or equal to 83

A. $x \leq 83$

C. $x < 83$

B. $x \geq 83$

D. $x > 83$

17 What is a solution for $8.5 < b$.

A. 11

C. 6

B. -10

D. -16

18 The French Club is sponsoring a bake sale. If their goal is to raise at least \$110, how many pastries must they sell at \$2.75 each in order to meet that goal? Write and solve an inequality.

A. $2.75p \geq 110;\ p \geq 40$

C. $110p \geq 2.75;\ p \geq 40$

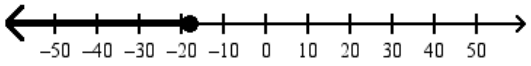
B. $2.75p \geq 110;\ p \geq 107.25$

D. $2.75p \geq 110;\ p \geq 302.5$

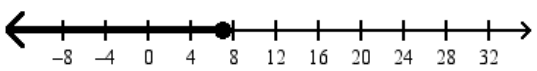
19 Solve

$d - 2 \leq 9$

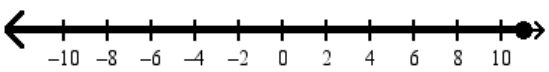
A. $d \leq -18$



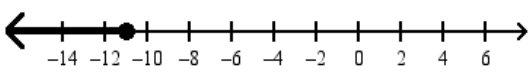
C. $d \leq 7$



B. $d \leq 11$



D. $d \leq -11$

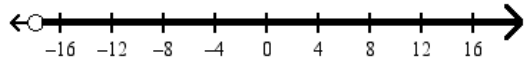


Directions: Answer the following question(s).

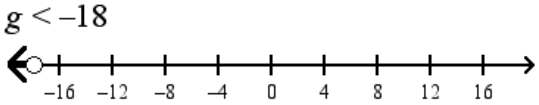
20 Solve

$-3g < -21$

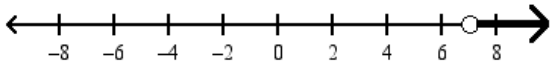
A. $g > -18$



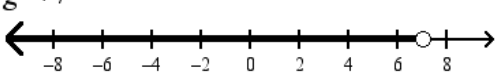
B. $g < -18$



C. $g > 7$



D. $g < 7$



21 Sovle

$6 + 6b \geq 4(b + 6)$

A. $b \geq 9$

B. $b \geq -9$

C. $b \geq 15$

D. $b \geq 12$

22 Solve

(1 point)

$9x - 2 - 11x \geq -2x + 4$

A. $x \geq -6$

B. $x \leq 6$

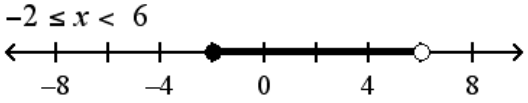
C. all real numbers

D. no solution

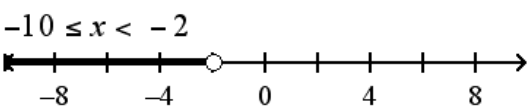
23 Solve the compound inequalitiy.

$-12 \leq 2x - 4 < 4$

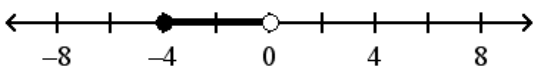
A. $-2 \leq x < 6$



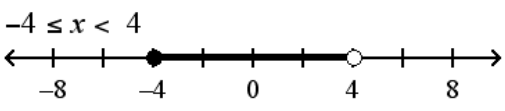
B. $-10 \leq x < -2$



C. $-4 \leq x < 0$



D. $-4 \leq x < 4$

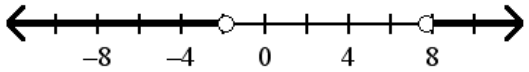


Directions: Answer the following question(s).

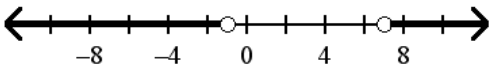
24 Solve the following compound inequality.

$$9x - 4 < -13 \text{ or } 3x + 7 > 16$$

A. $x < -1\frac{8}{9}$ or $x > 7\frac{2}{3}$

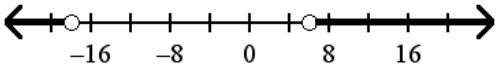


B. $x < -1$ or $x > 7\frac{2}{3}$

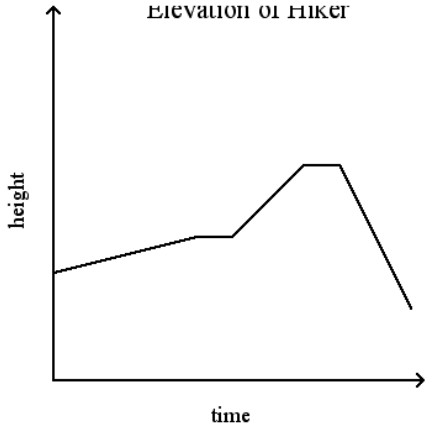


C. $x < -1$ or $x > 3$

D. $x < -18$ or $x > 6$



25 The graph shows the height of a hiker above sea level. The hiker walks at a constant speed for the entire trip. What are the variables? Describe how the variables are related at various points on the graph.



A. The variables are height and time. For the first part of the graph, the height is increasing slowly, which means the hiker is climbing a steep incline. Flat parts of the graph show where the elevation does not change, which means the hiker stopped to rest. The steep part at the end of the graph shows that the hiker is descending a gentle slope.

B. The variables are height and time. For the first part of the graph, the height is increasing slowly, which means the hiker is walking up a gentle slope. Flat parts of the graph show where the elevation does not change, which means the trail is flat here. The steep part at the end of the graph shows that the hiker is descending a steep incline.

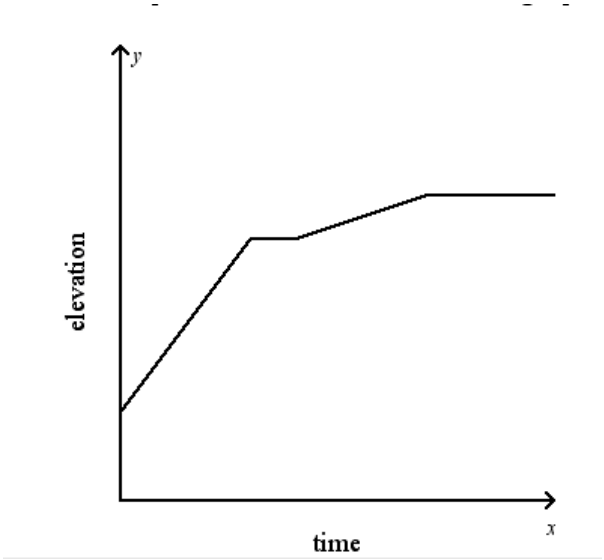
C. The variables are height and time. For the first part of the graph, the height is increasing slowly, which means the hiker is climbing a steep incline. Flat parts of the graph show where the elevation does not change, which means the trail is flat here. The steep part at the end of the graph shows that the hiker is descending a steep incline.

D. All of the above.

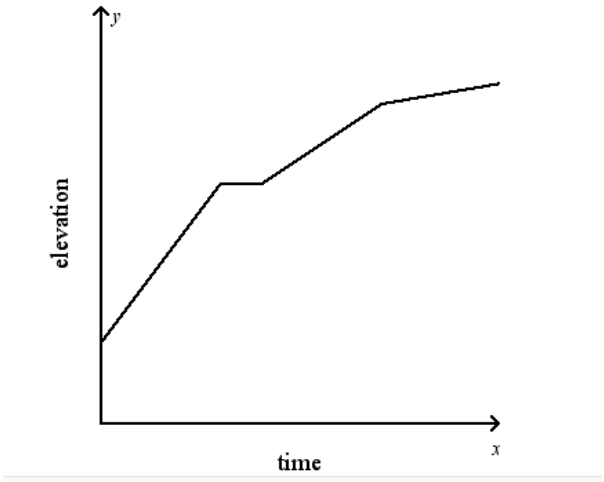
Directions: Answer the following question(s).

26 A hiker climbs up a steep bank and then rests for a minute. He then walks up a small hill and finally across a flat plateau. What sketch of a graph could represent the elevation of the hiker?

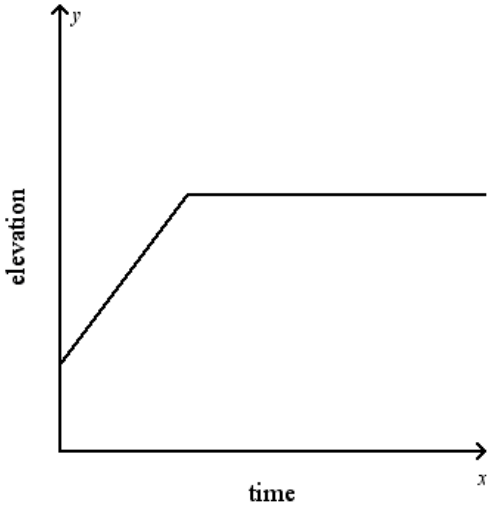
A.



B.



C.

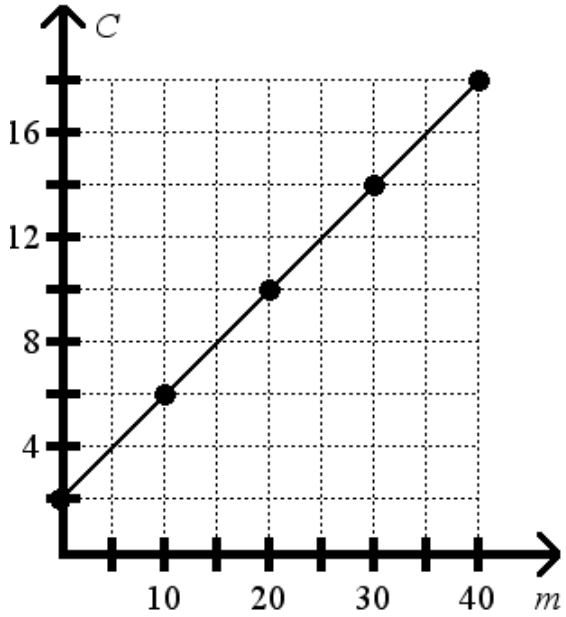


D. Any of the graphs could represent the situation, depending on the hiker's speed.

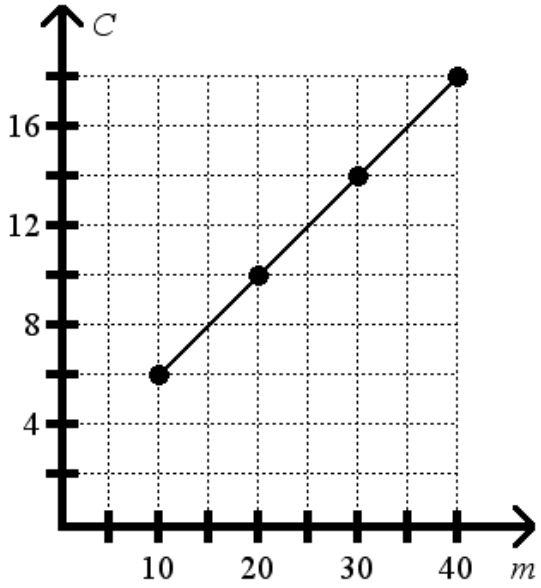
Directions: Answer the following question(s).

27 A taxi company charges passengers \$2.00 for a ride, and an additional \$0.40 for each mile traveled. The function rule $C = 0.40m + 2.00$ describes the relationship between the number of miles m and the total cost of the ride c. If the taxi company will only go a maximum of 40 miles, what is a reasonable graph of the function rule?

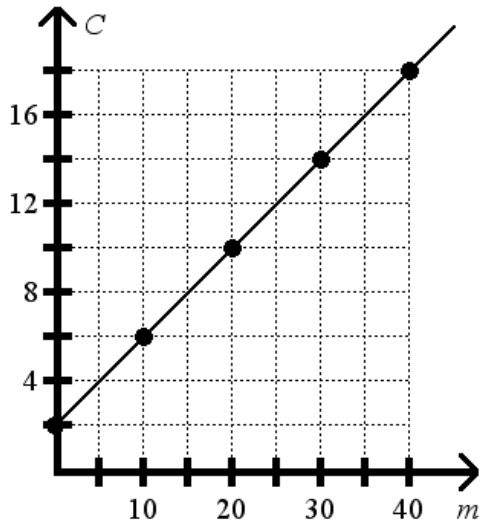
A.



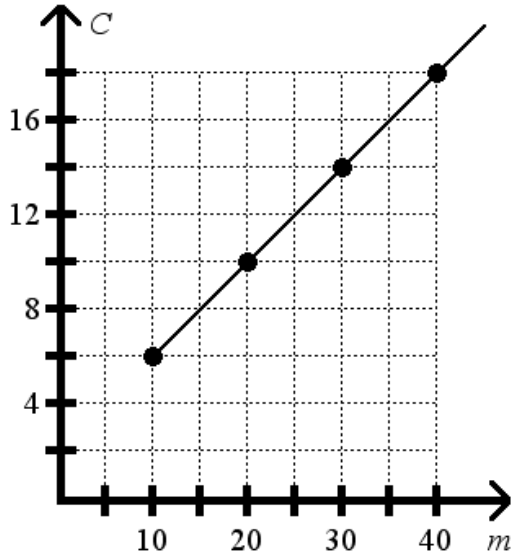
B.



C.



D.



28 A bottle holds 48 tsp of Vanilla. The amount ***A*** of vanilla remaining in the bottle decreases by 2 tsp per batch ***b*** of cookies. Does this situation represent a discrete or a continuous function?

A. Discrete

B. Continuous

Directions: Answer the following question(s).

29 A movie store sells DVDs for $11 each. Is this situation Continuous or Discrete?

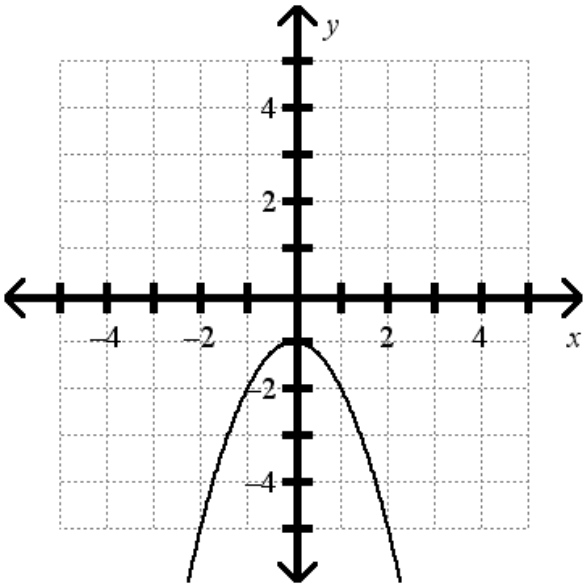
A. Continuous

B. Discrete

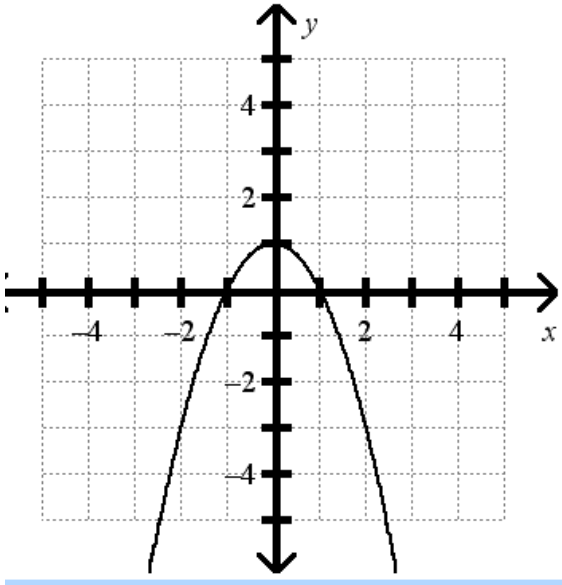
30 Graph.

$$y = x^2 - 1$$

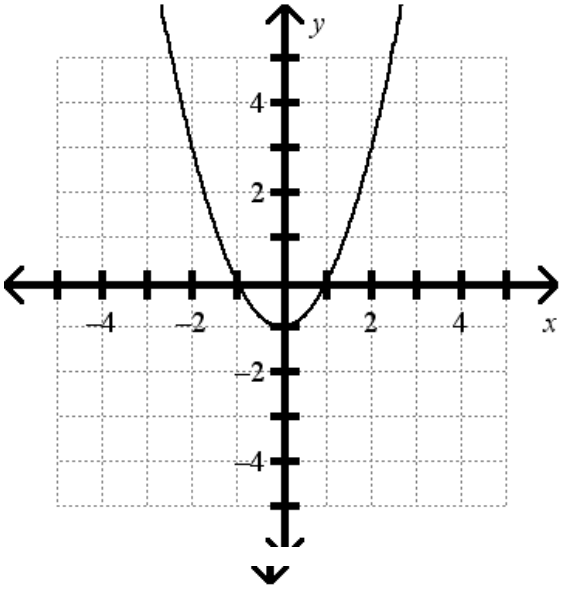
A.



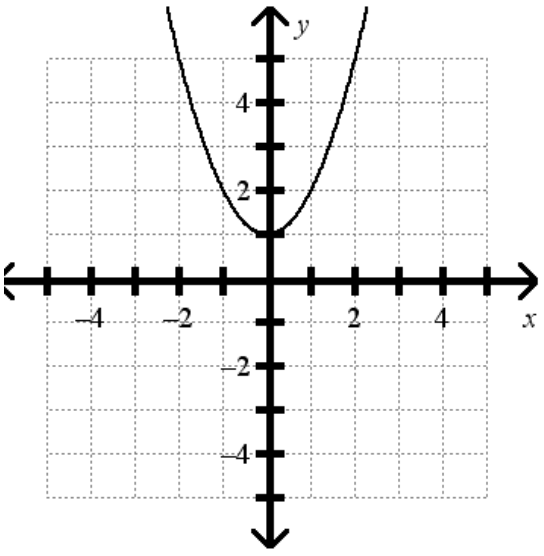
B.



C.



D.



Directions: Answer the following question(s).

31 Crystal earns $4.75 per hour mowing lawns.
- Write a rule to describe how the amount of money m earned is a function of the number of hours h spent mowing lawns.
- How much does Crystal earn if she works 2.25 hours?

A. $m(h) = \frac{h}{4.75}$; $0.47

B. $m(h) = 4.75h$; $10.21

C. $m(h) = 4.75h$; $10.69

D. $m(h) = 2h + 15$; $24.50

32 The function $j(x) = 41x$ represents the number of jumping jacks $j(x)$ you can do in x minutes. How many jumping jacks can you do in 10 minutes?

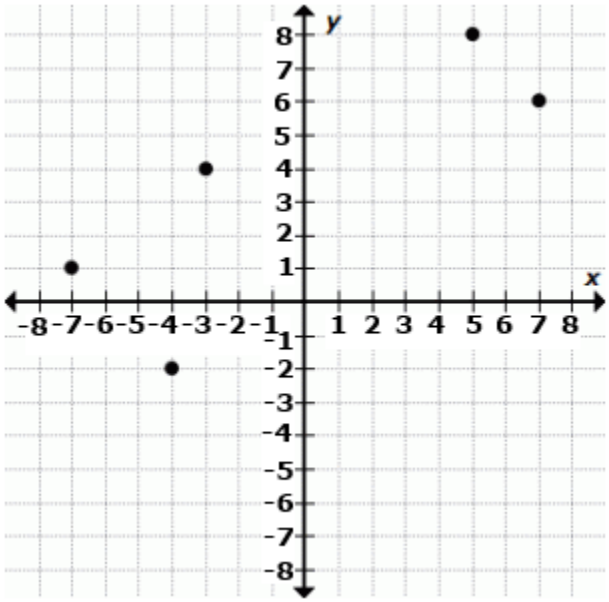
A. 151 jumping jacks

B. 410 jumping jacks

C. 4 jumping jacks

D. 231 jumping jacks

33 **What is the domain of the function shown on the graph below?**



A. {–7, –4, –3, –2, 1, 4, 5, 6, 7, 8}

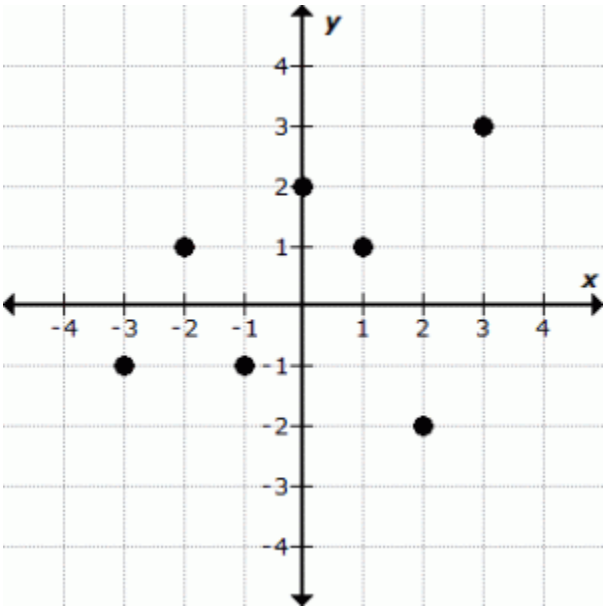
B. {–7, –4, –3, 5, 7}

C. {–2, 1, 4, 5, 7}

D. {–2, 1, 4, 6, 8}

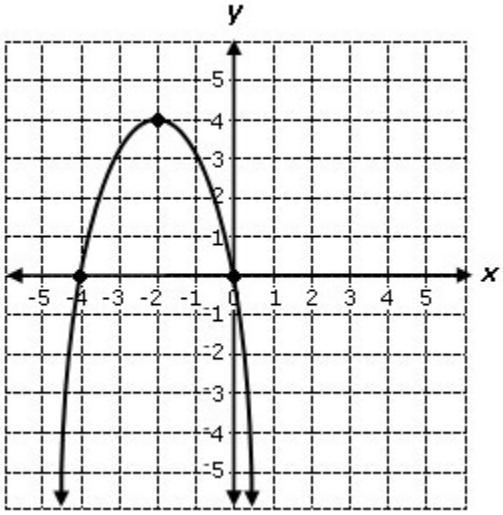
Directions: Answer the following question(s).

34 **Which set of numbers represents the RANGE in the following graph?**



A. {–2, –1, 1, 2, 3}
B. {–3, –2, –1, 0, 1, 2, 3}
C. {0, 1, 2, 3}
D. {–3, –2, –1, 0, 2, 5}

35 **Determine the range of the function whose graph is shown below:**



A. $\{y \mid y \geq 4\}$
B. $\{y \mid y \leq 4\}$
C. $\{y \mid 0 \leq y \leq 4\}$
D. $\{y \mid -4 \leq y \leq 0\}$

Directions: Answer the following question(s).

36 **Examine the following tables of ordered pairs and identify which relations are functions. Select *two* that apply.**

A.

x	*y*
1	–8
2	–6
3	–4
4	–2
5	0

B.

x	*y*
0	4
1	5
2	6
1	7
0	8

C.

x	*y*
–2	1
–1	–3
0	–4
1	–3
2	1

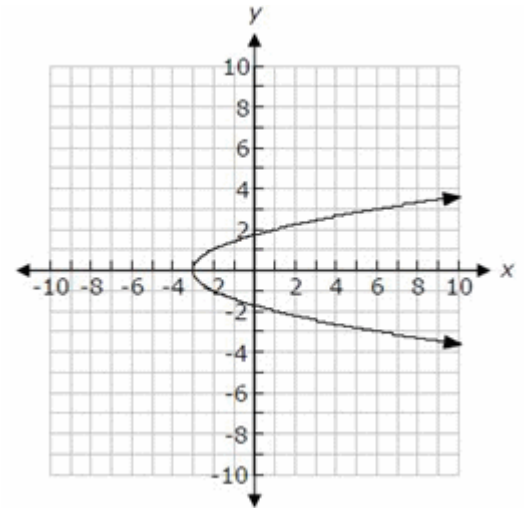
D.

x	*y*
3	2
3	7
4	–6
4	0
5	–1

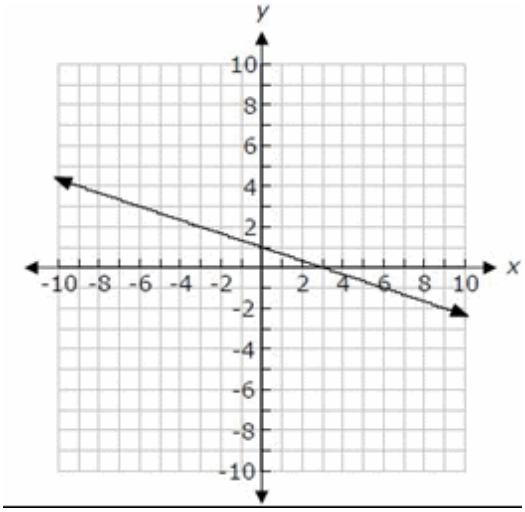
Directions: Answer the following question(s).

37 **Examine the following graphs and determine which relations are functions. Select *two* that apply.**

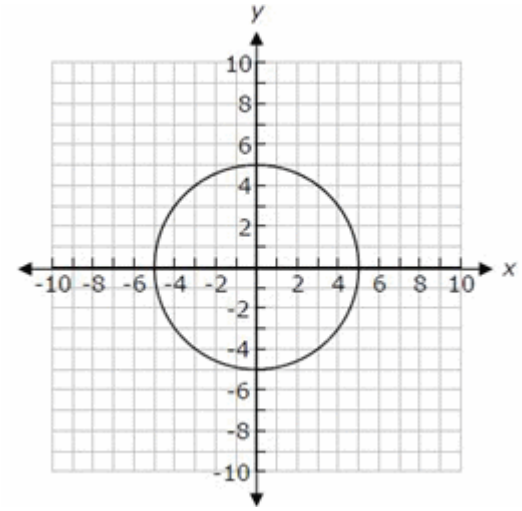
A.



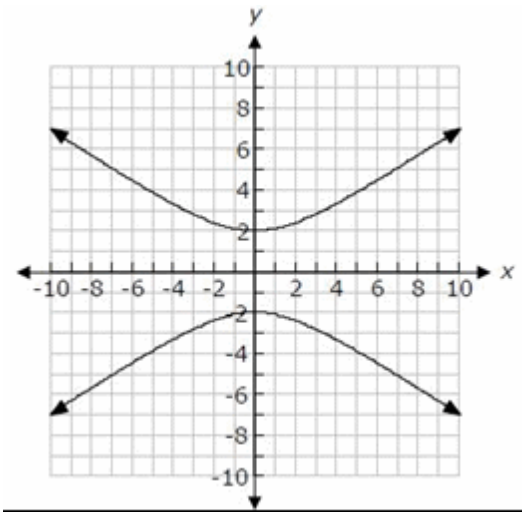
B.



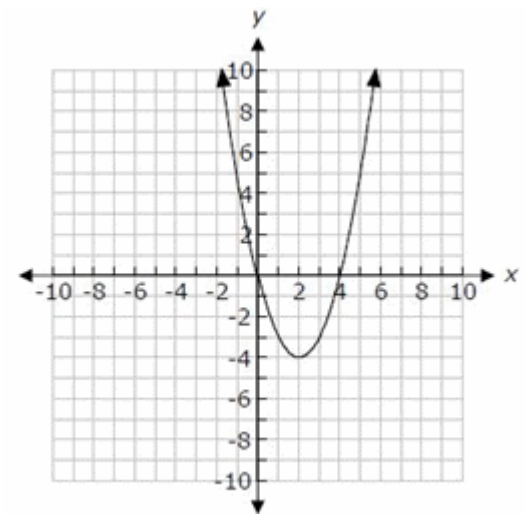
C.



D.



E.



Directions: Answer the following question(s).

38 You have 10 cups of flour. It takes 1 cup of flour to make 24 cookies. The function $c(f) = 24f$ represents the number of cookies, c, that can be made with f cups of flour. What domain and range are reasonable for the function?

A. The domain is $24 \le c(f) \le 240$.
The range is $1 \le f \le 10$.

B. The domain is $0 \le c(f) \le 240$.
The range is $0 \le f \le 10$.

C. The domain is $0 \le f \le 10$.
The range is $0 \le c(f) \le 240$.

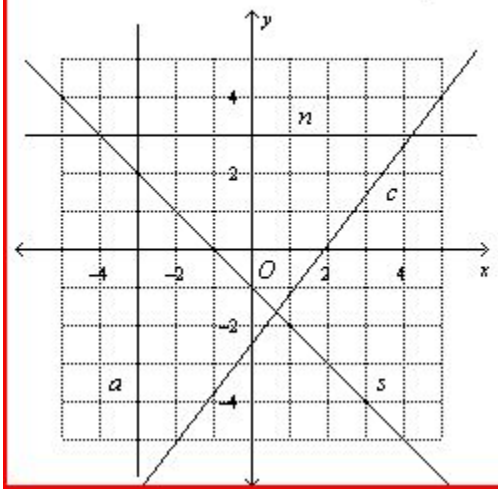
D. The domain is $1 \le f \le 10$.
The range is $24 \le c(f) \le 240$.

39 **This table shows the linear relationship of the number of movies rented from a video store and total cost.**

Number of Movies Rented	Total Cost (in dollars)
1	1.50
2	3.00
3	4.50
4	6.00

Enter the rate of change of this function.

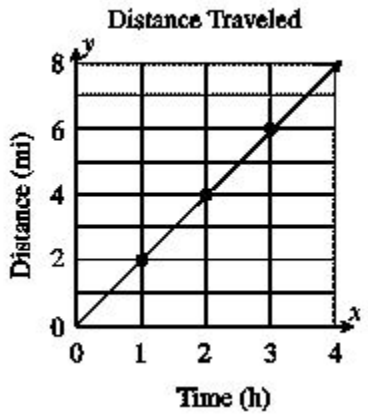
40 List the lines below in the order of positive slope, negative slope, zero slope, and undefined slope.



A. s, c, n, a
B. c, s, a, n
C. c, s, n, a
D. a, c, n, s

Directions: Answer the following question(s).

41 Find the slope of the line. Describe how one variable changes in relation to the other.



A. -1/2; distance decreases 1 mile every 2 hours
B. 1/2; distance increases 1 mile every 2 hours
C. 2; distance decreases by 2 miles per hour
D. 2; distance increases by 2 miles per hour

42 **Select the equation that represents the graph of the line below.**

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

Directions: Answer the following question(s).

43 Write an equation of this linear function. $m = 5, b = -10$

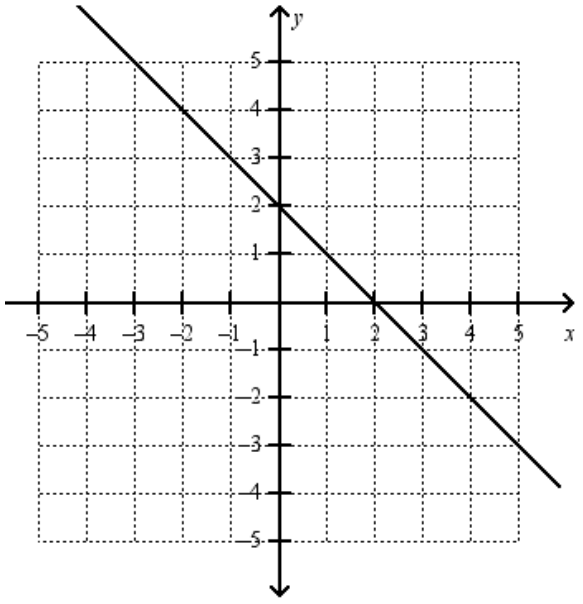
44 Write the equation of the line that passes through (5,4) and (12, -10) in slope intercept form.

Directions: Answer the following question(s).

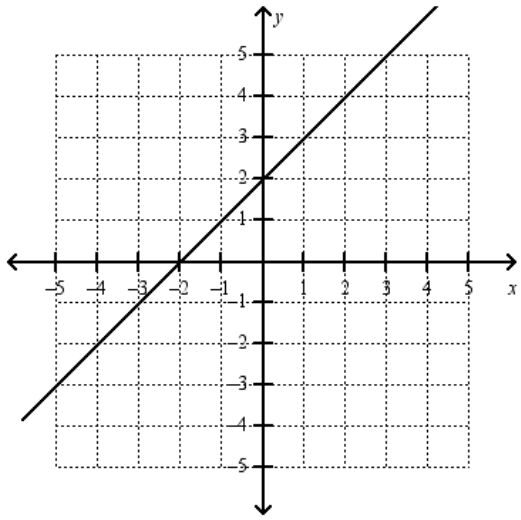
45 Graph

$y = -x + 2$

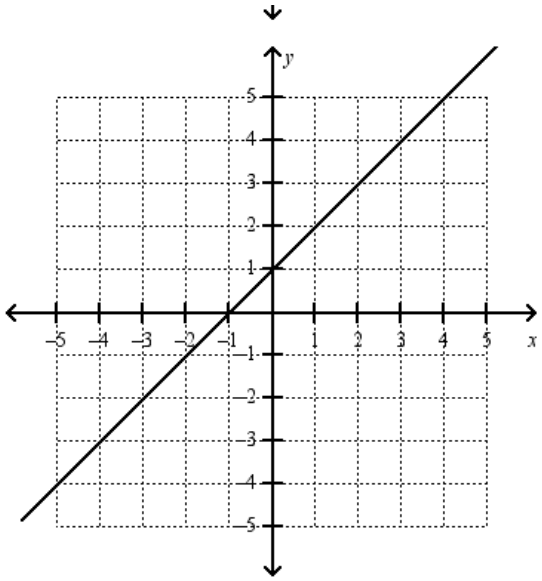
A.



C.

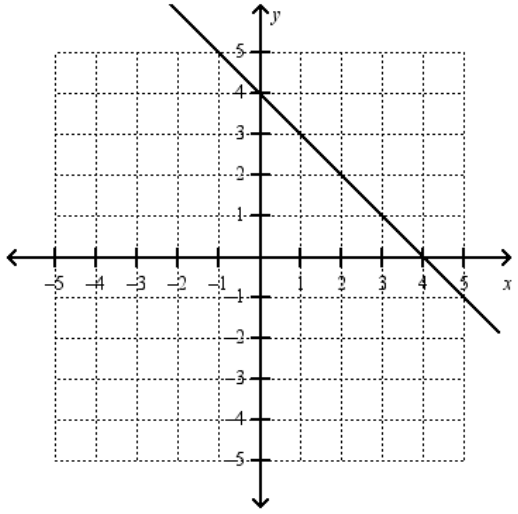


B.



d

D.



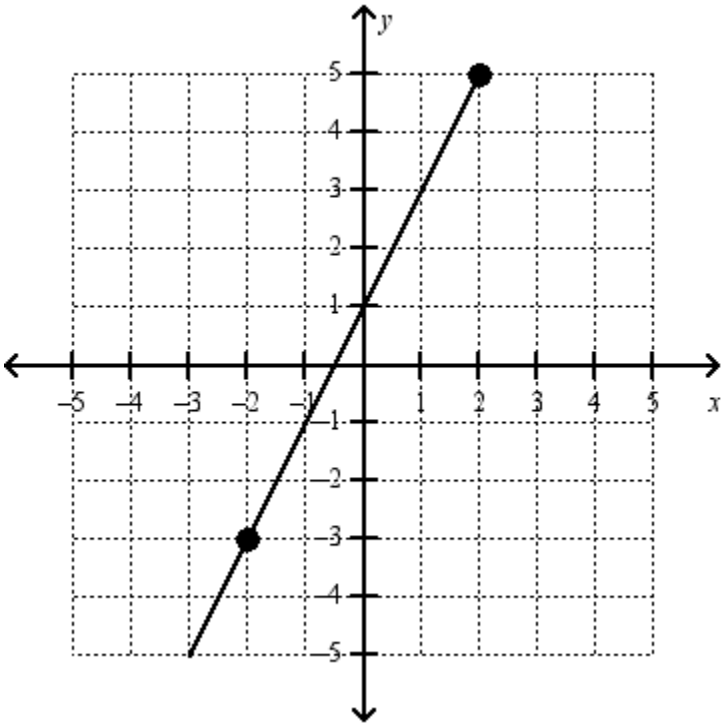
46

$(8, 3); m = 6$

Write the equation of the line in point slope form.

Directions: Answer the following question(s).

47 Using one of the points marked on the graph write the equation of the line in point slope form.

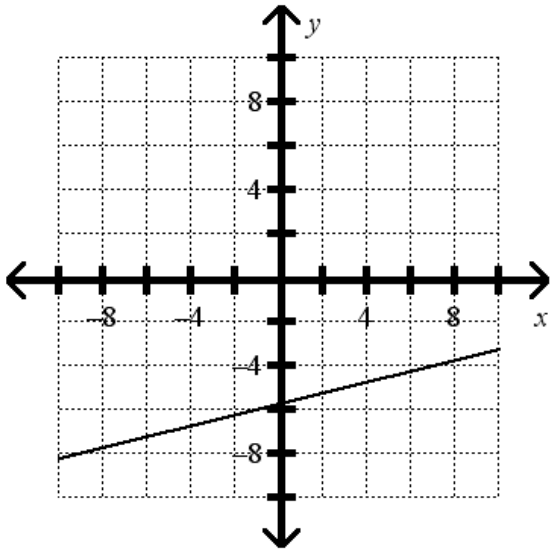


Directions: Answer the following question(s).

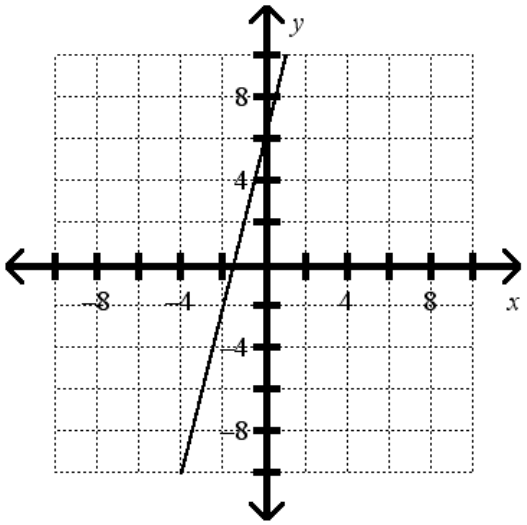
48 Graph

$$y + 5 = \frac{1}{4}(x - 3)$$

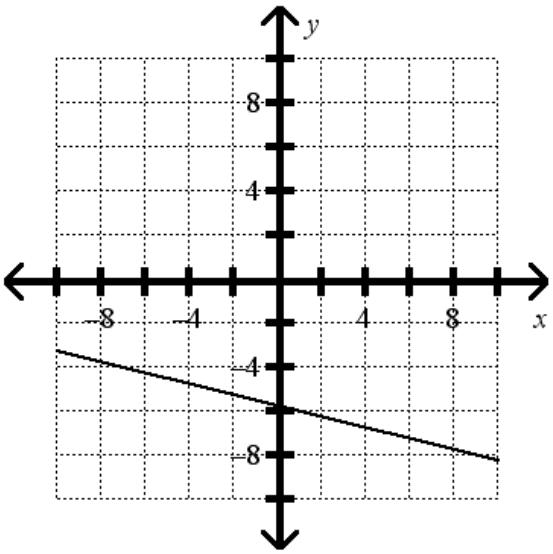
A.



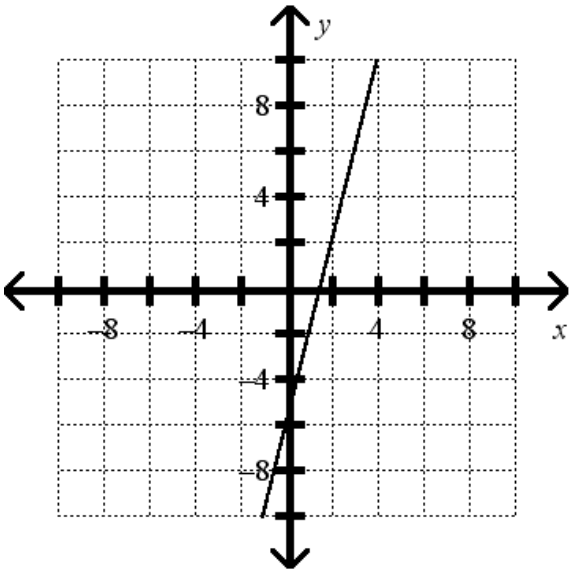
C.



B.



D.



49 Find the x and y intercepts of the line x - 6y = 12.

A. x-intercept is 12; y-intercept is -2

B. x-intercept is -6; y-intercept is 1

C. x-intercept is -2; y-intercept is 12

D. x-intercept is 1; y-intercept is -6

Directions: Answer the following question(s).

50 Max sells lemonade for $2 a cup and candy for $1.50 per bar. He earns a total of $426 by selling both the lemonade and the candy.

a.) Write an equation that would represent this situation.

51 Write $y = \frac{2}{3}x + 7$ in standard form using integers.

52 **Tell whether the lines for each pair of equations are *parallel*, *perpendicular*, or *neither*.**

$$y = -\frac{7}{8}x - 1$$

$$32x - 28y = -36$$

A. Parallel
B. Perpendicular
C. Neither

53 **Tell whether the lines for each pair of equations are *parallel*, *perpendicular*, or *neither*.**

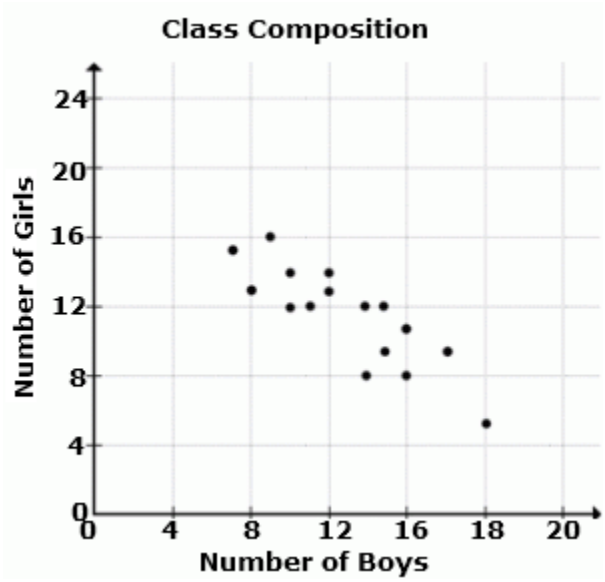
$$y = -\frac{7}{2}x - 9$$

$$-14x - 4y = -20$$

A. Parallel
B. Perpendicular
C. Neither

Directions: Answer the following question(s).

54 **The scatterplot below shows the number of boys and girls in sixteen different homerooms.**



Which statement is *most* strongly supported by the scatterplot?

A. The more boys in a homeroom, the fewer girls in the homeroom.

B. The more boys in a homeroom, the more girls in the homeroom.

C. The number of girls in a homeroom remains constant as the number of boys increases.

D. No relationship exists between the number of boys and girls in a homeroom.

55 Find the line of best fit and the correlation coeffiient and how that explains how close it is to being a line.

Hours Studying	1	2	3	4	5	6	7	8	9
Exam Mark (%)	65	67	73	74	77	80	84	85	?

A. $y = 62.286x + 2.964$, $r = 0.991$; about 95%

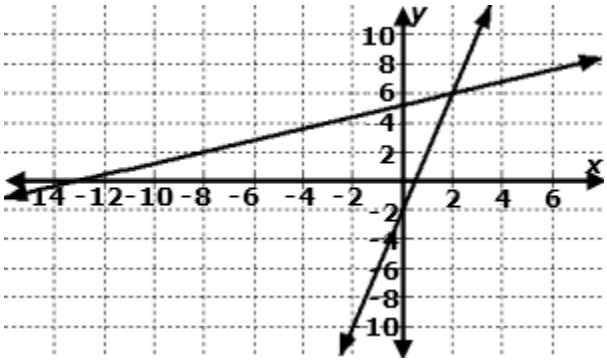
B. $y = 3x + 65$, $r = 0.951$; about 92%

C. $y = 2.964x + 62.286$, $r = 0.991$; about 89%

D. $y = 2.964x + 62.286$, $r = 0.991$; about 99%

Directions: Answer the following question(s).

56 **The system of equations $4x - y = 2$ and $2x - 5y = -26$ is graphed below. What is the solution to the system of equations?**



A. (–2, 0)
B. (0, –2)
C. (2, 6)
D. (6, 2)

57 Identify the type of soluiton for the system of equation down below.

$$\begin{cases} y = 3x + 6 \\ y = 3x - 4 \end{cases}$$

A. One Solution
B. Two Solutions
C. Infinitely Many Solutions
D. No Solution

58 Solve the system of equations using substitution.

y = x+6

y=2x

A. (6,12)
B. (-12,-6)
C. (-6,-12)
D. (2,4)

59 Solve the system of equation by using elimination.

5x+4y = -2

x - 4y=14

A. (3,-4.3)
B. (-3,2)
C. (2,-3)
D. (4,1)

Directions: Answer the following question(s).

60 Solve the following system by elimination.

$x - 2y = 6$

$3x - 6y = 18$

A. (6,18)

B. (1, -2)

C. Infinitely Many Solutions

D. No Solution