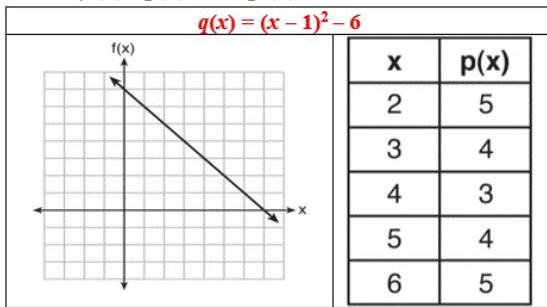


Name: _____

Assignment: SPRING 2020 MAT115 Assignment 3

1 The functions $f(x)$, $q(x)$, and $p(x)$ are shown below.



When the input is 4, which functions have the same output value?

- 1 $f(x)$ and $q(x)$, only
- 2 $f(x)$ and $p(x)$, only
- 3 $q(x)$ and $p(x)$, only
- 4 $f(x)$, $q(x)$, and $p(x)$

2 If $f(x) = \frac{x+3}{x-1}$, then $f(a+1)$ is equal to

- 1 $\frac{a+4}{a}$
- 2 $\frac{a+3}{a-1}$
- 3 5
- 4 4

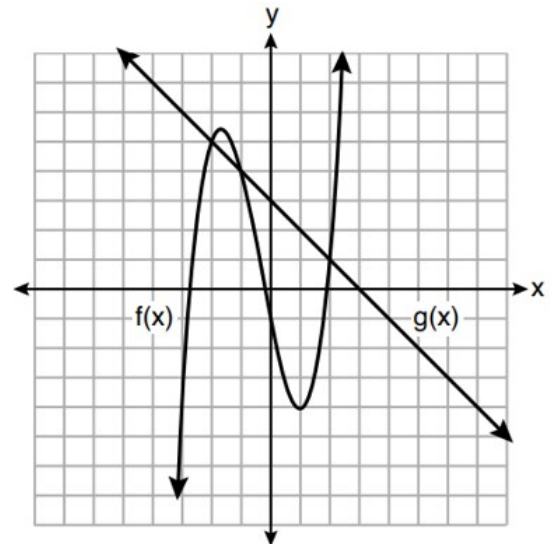
3 An equation of a line perpendicular to the line represented by the equation $y = -\frac{1}{2}x - 5$ and passing through $(6, -4)$ is

- 1 $y = -\frac{1}{2}x + 4$
- 2 $y = -\frac{1}{2}x - 1$
- 3 $y = 2x + 14$
- 4 $y = 2x - 16$

Class/Period: _____

Teacher: Villegas

4 The functions $f(x)$ and $g(x)$ are graphed on the set of axes below.



For which value of x is $f(x) \neq g(x)$?

- 1 -1
- 2 2
- 3 3
- 4 -2

5 Which equation does *not* represent a function?

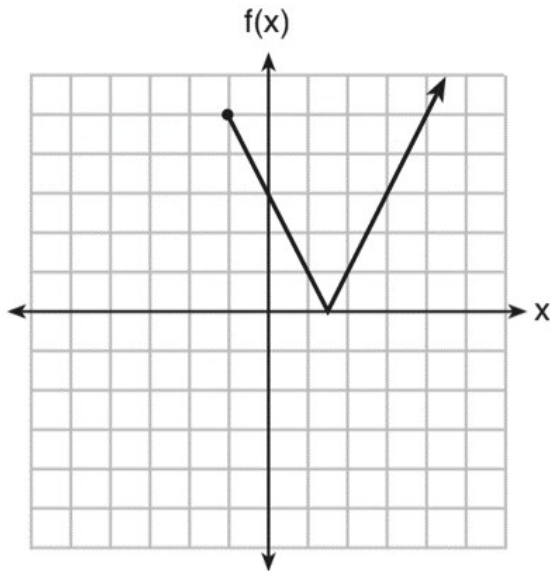
- 1 $y = 4$
- 2 $y = x^2 - 4$
- 3 $y = x - 4$
- 4 $x^2 + y^2 = 4$

6 Which inequality is represented by the accompanying graph?



- 1 $|x+2| > 5$
- 2 $|x+3| \geq 2$
- 3 $|x-1| \leq 5$
- 4 $|x-5| \geq 2$

7 The function $f(x)$ is graphed below.



The domain of this function is

- 1 all positive real numbers
- 2 all positive integers
- 3 $x \geq 0$
- 4 $x \geq -1$

8 The solution set of $|x - 3| > 5$ is

- 1 $\{x < 8 \text{ and } x < -2\}$
- 2 $\{x < 8 \text{ or } x < -2\}$
- 3 $\{x < 8 \text{ and } x > -2\}$
- 4 $\{x > 8 \text{ or } x < -2\}$

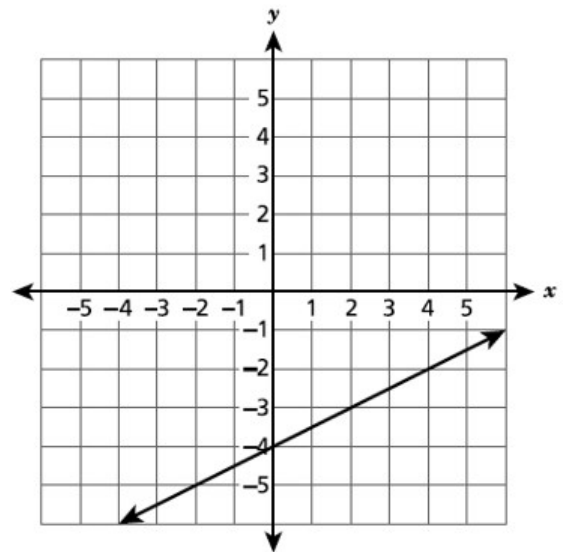
9 What is the solution set of the equation $|4x - 3| = 17$?

- 1 $\{5\}$
- 2 $\{5, -7/2\}$
- 3 $\{-5, 7/2\}$
- 4 $\{-7/2\}$

10 Which set of ordered pairs is *not* a function?

- 1 $\{(3, 1), (2, 1), (1, 2), (3, 2)\}$
- 2 $\{(4, 1), (5, 1), (6, 1), (7, 1)\}$
- 3 $\{(1, 2), (3, 4), (4, 5), (5, 6)\}$
- 4 $\{(0, 0), (1, 1), (2, 2), (3, 3)\}$

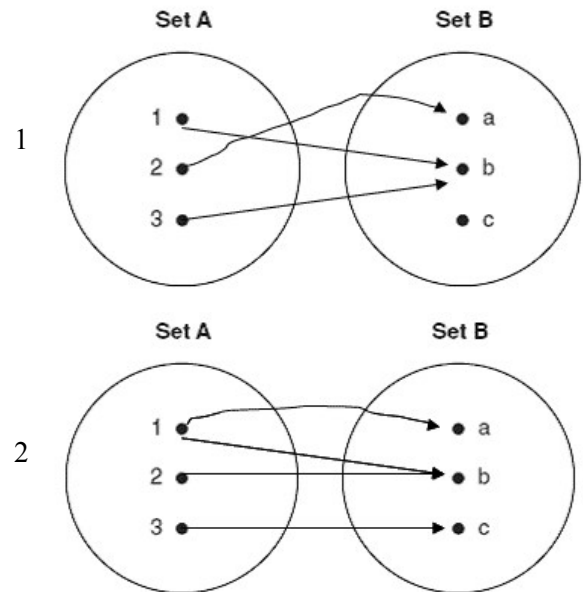
11 A line is graphed on the coordinate plane below.



Line $y = -x + 2$ will be graphed on the same coordinate plane to create a system of equations. What is the solution to that system of equations?

- 1 $(-2, 4)$
- 2 $(0, -4)$
- 3 $(2, -4)$
- 4 $(4, -2)$

12 Which of the following diagrams shows a mapping of a relation from set A to set B that is *not* a function?



- 13 A golfer hits a golf ball up in the air from a platform which is 10 feet above the ground. The table models the height, h , of the golf ball in feet as it travels a horizontal distance, d . Consider the graph of the coordinates below which model the balls path. Which of the following is the domain for the graph?

d	0	50	150	200	250	350	412
$h(d)$	10	45	85	90	85	45	0

- 1 $0 \leq d \leq 10$
 - 2 $0 \leq d \leq 412$
 - 3 $0 \leq h \leq 10$
 - 4 $10 \leq h \leq 0$
- 14 If the function $f(x) = 3x^2 - 5$ has the domain $\{-4, -3, 1, 5\}$, what is its range?

- 1 $\{4, 76, 139, 220\}$
- 2 $\{-29, -23, 1, 25\}$
- 3 $\{-2, 22, 43, 70\}$
- 4 $\{-17, -14, -2, 10\}$

- 15 What is the solution of the inequality $|x + 3| \leq 5$?

- 1 $-8 \leq x \leq 2$
- 2 $-2 \leq x \leq 8$
- 3 $x \leq -8$ or $x \geq 2$
- 4 $x \leq -2$ or $x \geq 8$

- 16 Which equation represents the line that passes through the point $(-2, 2)$ and is parallel to $y = \frac{1}{2}x + 8$?

- 1 $y = \frac{1}{2}x$
- 2 $y = -2x - 3$
- 3 $y = \frac{1}{2}x + 3$
- 4 $y = -2x + 3$

- 17 What is an equation of a line that is perpendicular to the line whose equation is $2y + 3x = 1$?

- 1 $y = \frac{2}{3}x + \frac{5}{2}$
- 2 $y = \frac{3}{2}x + 2$
- 3 $y = -\frac{2}{3}x + 1$
- 4 $y = -\frac{3}{2}x + \frac{1}{2}$

- 18 For which positive value of x is the function

$$f(x) = \frac{5x}{x^2 - 4x - 45}$$

- 1 5
- 2 9
- 3 45
- 4 0

- 19 A system of equations is shown below.

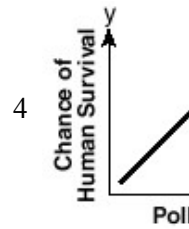
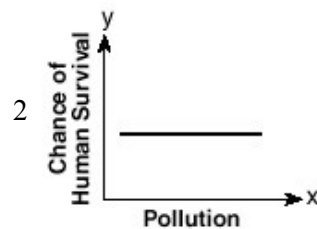
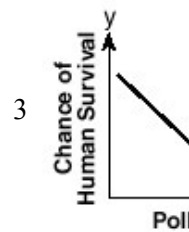
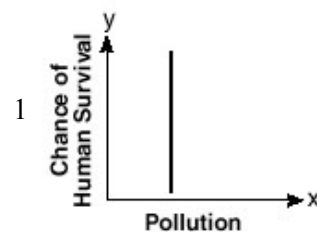
$$5x + 2y = -15$$

$$2x - 2y = -6$$

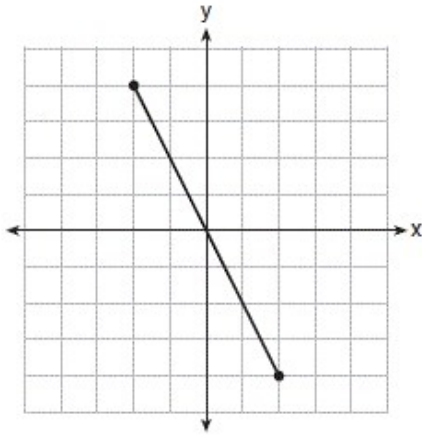
What is the solution to the system of equations?

- 1 $(-3, 0)$
- 2 $(0, -3)$
- 3 $(-3, 6)$
- 4 $(6, -3)$

- 20 Which graph does *not* represent a function of x ?



- 21 What is an equation of the perpendicular bisector of the line segment shown in the diagram below?



- 1 $y + 2x = 0$
- 2 $y - 2x = 0$
- 3 $2y + x = 0$
- 4 $2y - x = 0$

- 22 Linear functions M and P are shown below.

FUNCTION M		FUNCTION P
x	y	
-2	-9	$y = 7x + 9$
0	1	
2	11	
4	21	

In comparing the rates of change, which statement about Function M and Function P is true?

- 1 Their rates of change differ by 2.
 - 2 Their rates of change differ by 4.
 - 3 Function M has a greater rate of change than Function P.
 - 4 Function M and Function P have the same rate of change.
- 23 Which equation represents the line that is perpendicular to the graph of $4x + 3y = 9$ and passes through $(-2, 3)$?
- 1 $3x - 4y = -18$
 - 2 $3x + 4y = 18$
 - 3 $3x - 4y = -6$
 - 4 $3x + 4y = 6$

- 24 Which inequality is represented in the accompanying graph?



- 1 $-3 \leq x < 4$
- 2 $-3 \leq x \leq 4$
- 3 $-3 < x < 4$
- 4 $-3 < x \leq 4$

- 25 Solve the system of equations below.

$$\begin{aligned} 10x + 2y &= 22 \\ y &= -5x + 11 \end{aligned}$$

- 1 $x = 2, y = 1$
- 2 $x = -2, y = -1$
- 3 No solution
- 4 Infinitely many solutions

- 26 The amount of revenue in dollars, y , that Jason receives from selling x posters is given by the equation $y = 4x$. The cost of producing x posters is given by the equation $y = \frac{1}{2}x + 280$. How many posters does Jason need to sell so that the cost and revenue are equal?

- 1 40
- 2 80
- 3 140
- 4 320

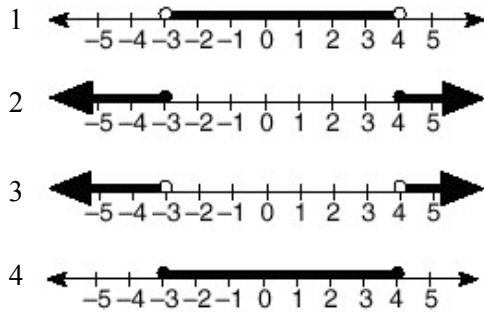
- 27 Mr. Santos is buying two types of gift cards to give as prizes to employees at a company picnic. He will buy restaurant gift cards that each cost \$40 and movie theater gift cards that each cost \$30. He has \$510 to buy a total of 15 gift cards. How many of each type of gift card can Mr. Santos buy?

- 1 He can buy 8 restaurant gift cards and 7 movie gift cards
- 2 He can buy 10 restaurant gift cards and 5 movie gift cards
- 3 He can buy 6 restaurant gift cards and 9 movie gift cards
- 4 He can buy 12 restaurant gift cards and 3 movie gift cards

28 The function $f(x) = \frac{1}{x-3}$ is defined for all real numbers except when x is

- 1 $-\frac{1}{3}$
- 2 -3
- 3 3
- 4 0

29 Which graph represents the solution set of $|2x - 1| < 7$?



30 What is the solution set of the equation $|2x + 1| = 9$?

- 1 $\{-5\}$
- 2 $\{-4, 5\}$
- 3 $\{4, -5\}$
- 4 $\{4\}$