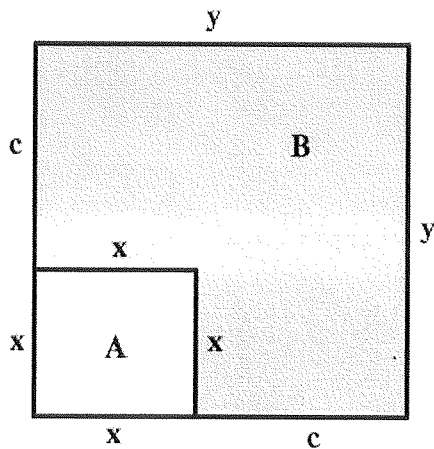


103a

23. The shape below consists of a small square, labeled A, and a large square, labeled B.



24. Describe the area of region A:

25. Describe the area of region B:

26. Describe length y in terms of x given that $c = 5$.

- a. $y = 2x$
- b. $y = x - 3$
- c. $y = x + 5$
- d. $y = 5 - x$

27. Describe area B in terms of x given that $c = 5$.

28. Find area B if $x = 10$ and $c = 5$.

29. Find an equation for the perimeter of B given in terms of x with $c = 5$.

30. Find the area of B if perimeter = 68 and $c = 5$.

#1036

Practice Using the Graphing Calculator:

Part 1: solving a system of equations

38. $y = x + 3$
 $y = -2x + 7$

39. $y = x$
 $y = -x^2 + 2$

40. $y + 3 = x$
 $2x + 3y = 9$

41. $y + x^2 = x - 4$
 $y + 3x - 6 = 2x^2$

Part 2: find the appropriate regression equation for each table:

42.

x	y
0	1
1	4
2	16
3	64

43.

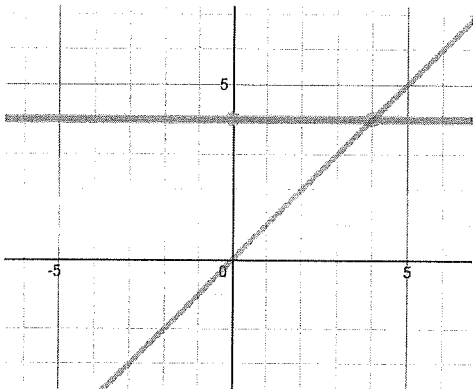
x	y
0	-3
1	-1
2	1
3	3

44.

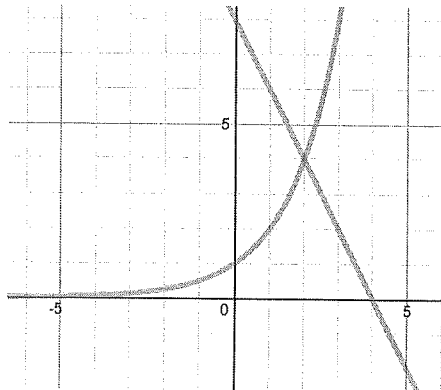
x	y
0	0
1	2
2	6
3	12

Part 3: Find all solutions from the graphs:

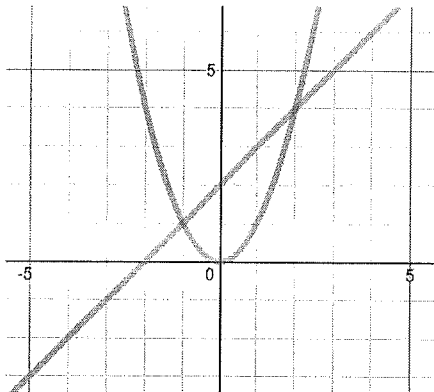
45.



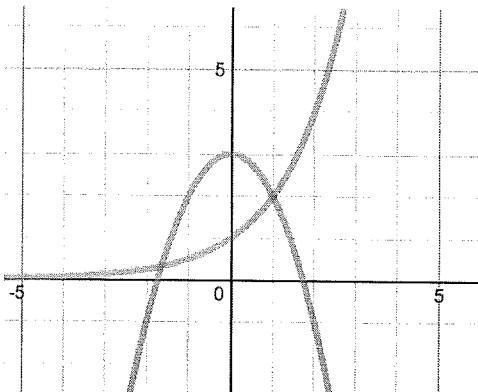
46.



47.



48.



Part 4: Find all solutions to the equation:

49. $4x - 2 = -x + 9$

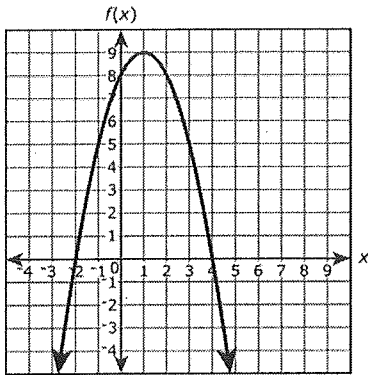
50. $x^2 - 2 = x^3 - x$

#106a

Name _____

Algebra 1 2015 PBA Practice Test Chapter 9 – Non Calculator:

The figure shows a graph of the function of $f(x)$ in the xy -coordinate plane, with the vertex at $(1, 9)$ and the zeros at -2 and 4 .



The function g is defined by $g(x) = -3x + 2$.

Which statements are true? Select **all** that apply.

- A. $f(-2)$ is greater than $g(-2)$.
- B. $f(-1)$ is less than $g(-1)$.
- C. $f(0)$ is greater than $g(0)$.
- D. $f(1)$ is less than $g(1)$.

In the xy -coordinate plane, the graph of the equation $y = 3x^2 - 12x - 36$ has zeros at $x = a$ and $x = b$, where $a < b$. The graph has a minimum at $(c, -48)$. What are the values of a , b , and c ?

- A. $a = 2, b = 4, c = 2$
- B. $a = -2, b = 6, c = 2$
- C. $a = -3, b = 3, c = 0$
- D. $a = 3, b = 6, c = 2$

Let a represent a non-zero rational number and let b represent an irrational number.

Part A

Which expression could represent a rational number?

- A. $-b$
- B. $a + b$
- C. ab
- D. b^2

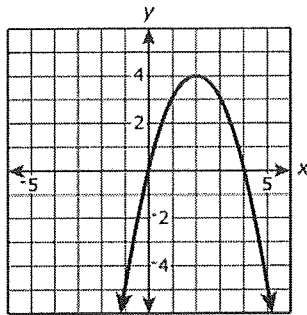
Part B

Consider a quadratic equation with integer coefficients and two distinct zeros. If one zero is irrational, which statement is true about the other zero?

- A. The other zero must be rational.
- B. The other zero must be irrational.
- C. The other zero can be either rational or irrational.
- D. The other zero must be non-real.

#106b

The function $f(x) = 4x - x^2$ is graphed in the xy -coordinate plane as shown.



Part A

Based on the graph of the function, which statements are true?

Select **all** that apply.

- A. f is increasing on the interval $x < 0$.
- B. f is decreasing on the interval $x < 0$.
- C. f is increasing on the interval $0 < x < 2$.
- D. f is decreasing on the interval $0 < x < 2$.
- E. f is increasing on the interval $2 < x < 4$.
- F. f is decreasing on the interval $2 < x < 4$.
- G. f is increasing on the interval $x > 4$.
- H. f is decreasing on the interval $x > 4$.

Part B

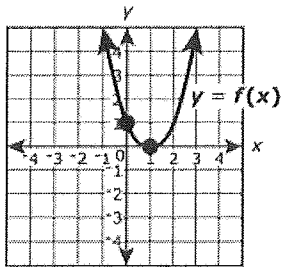
Based on the graph of the function, which statements are true?

Select **all** that apply.

- A. $f(x) < 0$ on the interval $x < 0$.
- B. $f(x) > 0$ on the interval $x < 0$.
- C. $f(x) < 0$ on the interval $0 < x < 2$.
- D. $f(x) > 0$ on the interval $0 < x < 2$.
- E. $f(x) < 0$ on the interval $2 < x < 4$.
- F. $f(x) > 0$ on the interval $2 < x < 4$.
- G. $f(x) < 0$ on the interval $x > 4$.
- H. $f(x) > 0$ on the interval $x > 4$.

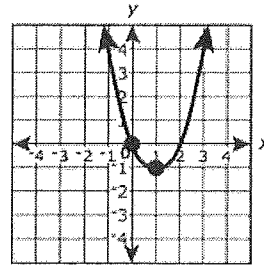
#100c

Consider the function, $f(x)$, shown on the coordinate plane.



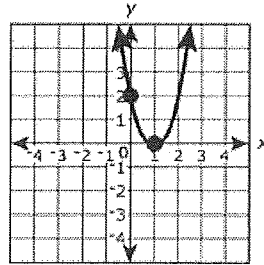
Identify the equations in the form $y = pf(x+r) + n$ which generate each of the graphs shown as a transformation of $f(x)$. Enter a number into each of the available boxes.

Part A



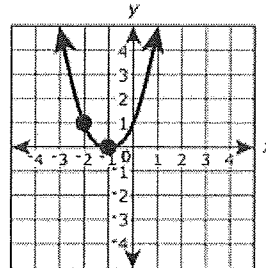
$y = \boxed{} f(x + \boxed{}) + \boxed{}$

Part B



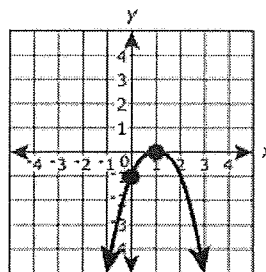
$y = \boxed{} f(x + \boxed{}) + \boxed{}$

Part C



$y = \boxed{} f(x + \boxed{}) + \boxed{}$

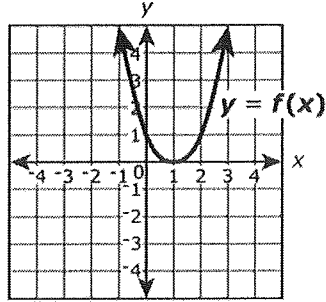
Part D



$y = \boxed{} f(x + \boxed{}) + \boxed{}$

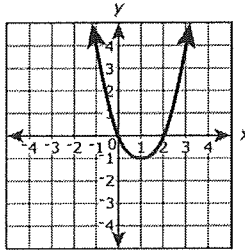
#106d

Consider the function $f(x)$, shown in the xy -coordinate plane, as the parent function.



Part A

The graph of a transformation of the function $f(x)$ is shown.

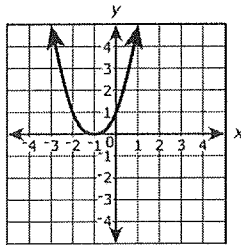


Which expression defines the transformation shown?

- A. $f(x + 0) - 1$
- B. $f(x + 0) + 1$
- C. $f(x - 1) + 0$
- D. $f(x + 1) + 0$

Part C

The graph of a transformation of the function $f(x)$ is shown.

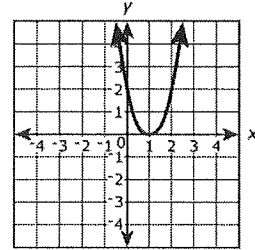


Which expression defines the transformation shown?

- A. $f(x) - 2$
- B. $f(x - 2) + 0$
- C. $f(x) + 2$
- D. $f(x + 2) + 0$

Part B

The graph of a transformation of the function $f(x)$ is shown.

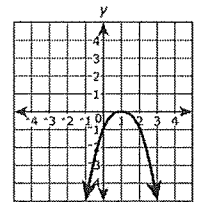


Which expression defines the transformation shown?

- A. $\frac{1}{2}f(x + 0) + 0$
- B. $2f(x + 0) + 0$
- C. $\frac{1}{2}f(x - 1) - 1$
- D. $2f(x + 1) - 0$

Part D

The graph of a transformation of the function $f(x)$ is shown.

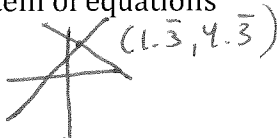



The transformation shown can be expressed in the form $y = p[f(x + r)] + n$, where p , r , and n are constants. Which value must be less than 0?

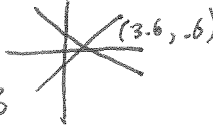
- A. p
- B. r
- C. x
- D. n

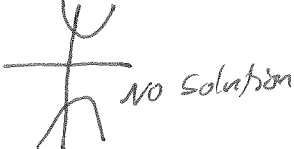
Practice Using the Graphing Calculator:

Part 1: solving a system of equations

38. $y = x + 3$
 $y = -2x + 7$ 

39. $y = x$
 $y = -x^2 + 2$ 

40. $y + 3 = x$ $y = x - 3$
 $2x + 3y = 9$
 $y = (9 - 2x) / 3$ 

41. $y + x^2 = x - 4$ $y = -x^2 + x - 4$
 $y + 3x - 6 = 2x^2$ $y = 2x^2 - 3x + 6$ 

Part 2: find the appropriate regression equation for each table:

42. L_1 L_2

x	y
0	1
1	4
2	16
3	64

exponential
 $y = 1.4^x$
.4
.4
.4
 STAT > CALC > Expkey

43.

x	y
0	-3
1	-1
2	1
3	3

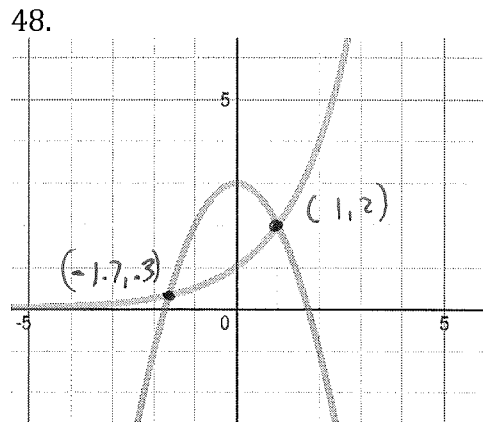
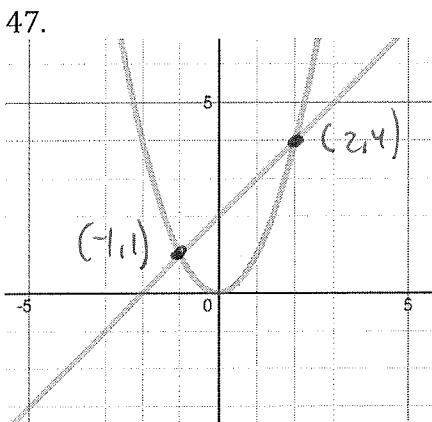
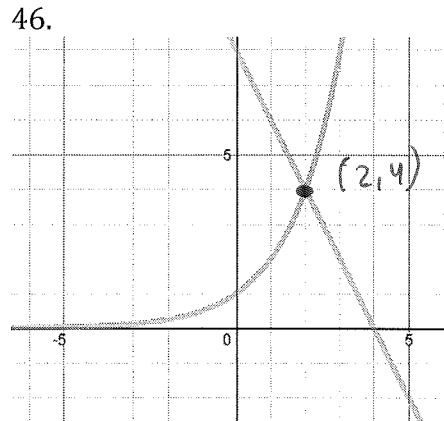
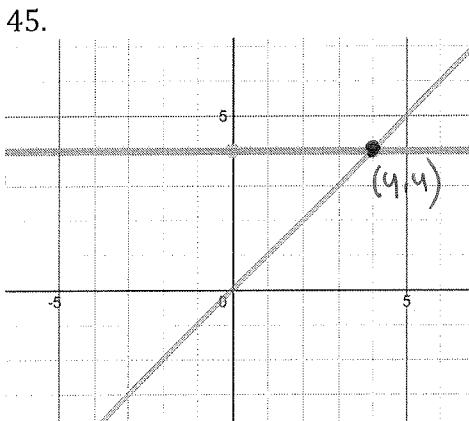
linear
 $y = 2x - 3$
+2
+2
+2

44.

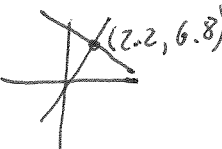
x	y
0	0
1	2
2	6
3	12

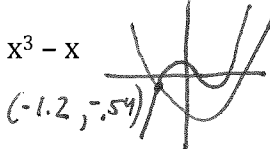
quadratic
 $y = 1x^2 + 1x + 0$
 $y = x^2 + x$
+2
+4
+6

Part 3: Find all solutions from the graphs:

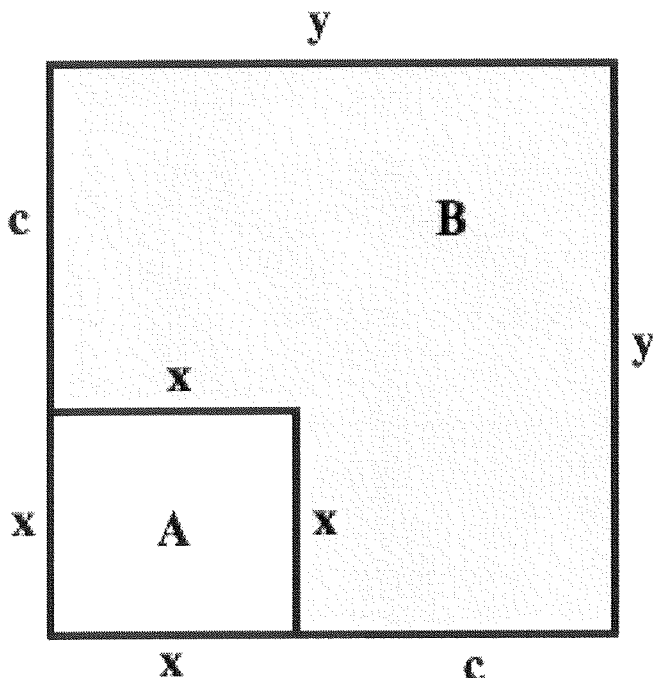


Part 4: Find all solutions to the equation:

49. $4x - 2 = -x + 9$
 $y_1 = 4x - 2$
 $y_2 = -x + 9$ 

50. $x^2 - 2 = x^3 - x$ 

23. The shape below consists of a small square, labeled A, and a large square, labeled B.



24. Describe the area of region A:

$$x^2$$

25. Describe the area of region B:

$$y^2 - x^2 \text{ or } (x+c)^2 - x^2 \text{ or } x^2 + 2cx + c^2 - x^2$$

$$2cx + c^2$$

26. Describe length y in terms of x given that $c = 5$.

- a. $y = 2x$
- b. $y = x - 3$
- c. $y = x + 5$
- d. $y = 5 - x$

$$y = x + c$$

$$y = x + 5$$

27. Describe area B in terms of x given that $c = 5$.

$$(x+5)^2 - x^2 = x^2 + 10x + 25 - x^2 = 10x + 25$$

* 28. Find area B if $x = 10$.

and $c = 5$

$$y^2 - 100 \text{ or } 10x + 25 = 10(10) + 25$$

$$125$$

$$(10+5)^2 - 100 = 225 - 100 = 125$$

* 29. Find an equation for the perimeter of B given that $c = 5$.

in terms of x

$$y + y + c + c + x + x$$

$$(c+x) + (c+x) + c + c + x + x$$

$$4c + 4x$$

* 30. Find the area of B if perimeter = 68 and $c = 5$

$$68 = 4x + 20$$

$$48 = 4x$$

$$12 = x$$

$$A = 10x + 25$$

$$A = 10(12) + 25$$

$$(145)$$

$$c = 5 \quad 4(5) + 4x = 4x + 20$$