SM 3H

Date: **Section:**

Objective:

Vocabulary:

Inverse:

Inverse operation:

Inverse property:

One-to-one property:

Way to find one-to-one:

To find the inverse using a table:

Example 1:

$f(x)$	
x	y
5	5
7.5	6
-9	-8
15	-5
-2	3

$f^{-1}(x)$	
x	y

To find the inverse using ordered pairs:

Example 2:

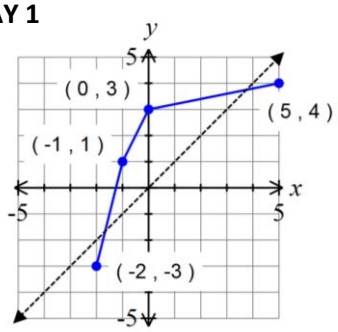
$\{(1,1),(2,4),(3,9),(0,0),(-1,1),(-2,4)\}$

To find the inverse using a graph: WAY 1)

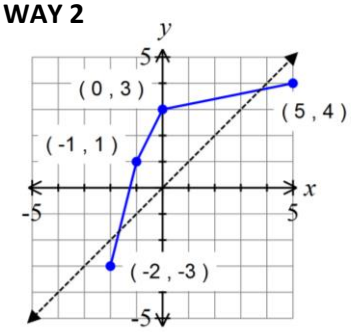
WAY 2)

Example 3:

WAY 1



WAY 2



Which of the above examples, #1, #2, or #3, are one-to-one and why?

Which parent graph is not one-to-one without restrictions?

To find the inverse using an equation:

Find the inverse function, domain, and range.

Example 1:

$f(x) = -3x + 1$

Example 2:

$f(x) = -2\sqrt{3 - x}$

Example 3:

$f(x) = \sqrt[3]{x + 2} - 3$

Example 4:

$f(x) = \dfrac{2x + 3}{5x - 4}$

To verify that two functions are inverses, show that _____.

Example 1:

Verify that the inverse of $f(x) = \dfrac{2}{x + 5}$ is $f^{-1}(x) = \dfrac{2}{x} - 5.$

Example 2:

Verify that the inverse of $f(x) = \sqrt[3]{2x}$ is $f^{-1}(x) = \dfrac{x^3}{2}.$