Name _____ Date _____ Class _____

LESSON 1-4

Inverses of Functions

Reteach

To find the inverse of a function:

1. Substitute y for $f(x)$.
2. Solve for x in terms of y.
3. Switch x and y.
4. Replace y with $f^{-1}(x)$.

Example: $f(x) = 6x - 1$

$y = 6x - 1$

$y + 1 = 6x$

$\frac{y+1}{6} = x$

$y = \frac{x+1}{6}$

$f^{-1}(x) = \frac{x+1}{6}$

Find the inverse function, $f^{-1}(x)$, for the function given.

1. $f(x) = 2x + 5$

2. $f(x) = -3x + 8$

The inverse of a function switches the xs and ys, causing each point on the graph to reflect across the diagonal line $y = x$.

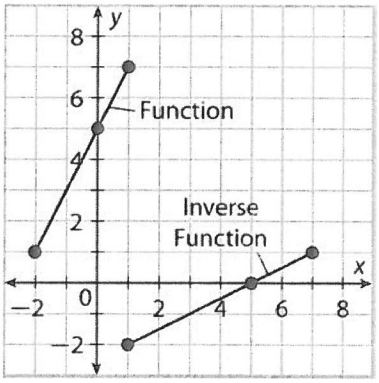
Example

Function

x	y
−2	1
0	5
1	7

Inverse Function

x	y
1	−2
5	0
7	1



Find the ordered pairs of the inverse function. Graph the function and its inverse.

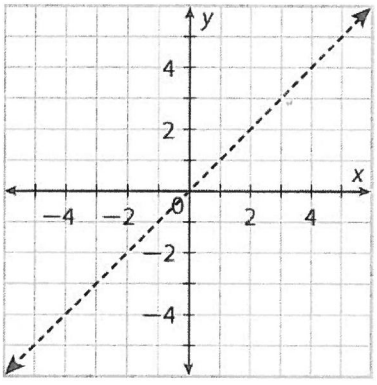
3.

Function

x	y
1	5
2	2
3	−1

Inverse Function

x	y



Name *key Date Class

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1. $f(x) = 2x + 5$

① ×2 ① −5

② +5 ② ÷2

$f^{-1}(x) = \frac{x-5}{2}$

2. $f(x) = -3x + 8$

① ×-3 ① -8

② +8 ② ÷-3

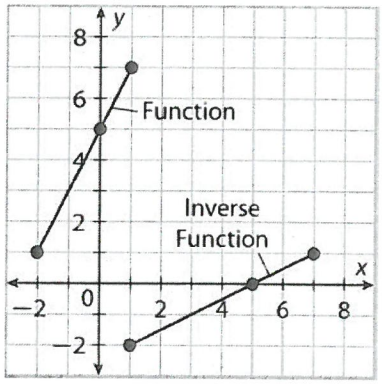
$f^{-1}(x) = \frac{x-8}{-3}$

The inverse of a function switches the xs and ys, causing each point on the graph to reflect across the diagonal line $y = x$.

Example

Function	
x	y
−2	1
0	5
1	7

Inverse Function	
x	y
1	−2
5	0
7	1



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3.

Function	
x	y
1	5
2	2
3	−1

Inverse Function	
x	y
5	1
2	2
-1	3