

Name: _____

1.07 NOTES – Inverses

Example One:

- Graph the linear parent function $y = x$ using a dotted line
- Graph $f(x) = 2x + 1$ by coming up with a table of ordered pairs.

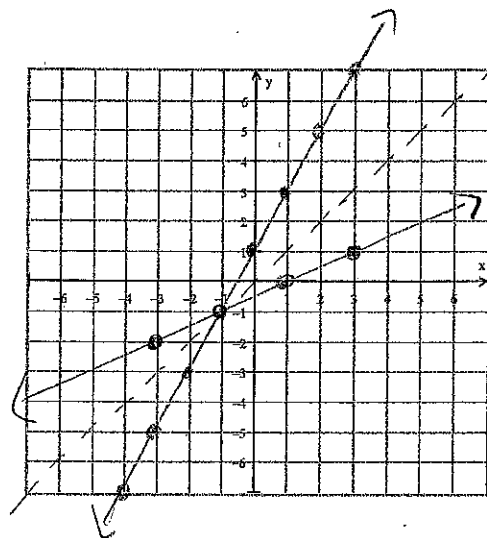
$y = 2x + 1$
Original

Inverse

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

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

*To find
the inverse
Switch
 x & y
Values.



- Graph the inverse using its table of ordered pairs.

Example Two:

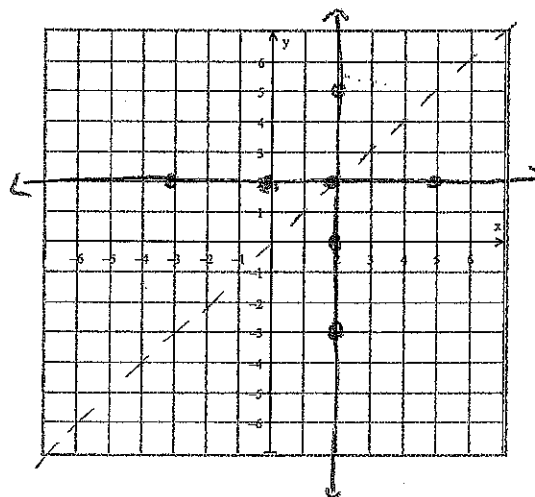
- Graph the linear parent function $y = x$ using a dotted line
- Graph $f(x) = 2$ by coming up with a table of ordered pairs.

$y = 2$
Original

Inverse

x	y
-3	2
0	2
2	2
5	2

x	y
2	-3
2	0
2	2
2	5



- Graph the inverse using its table of ordered pairs.

Conclusion: What do you notice about the relationship between the ordered pairs of a function and the ordered pairs of its inverse?

Ordered pairs – Switch x & y

Graphically – reflection over the line $y = x$

Steps to find an inverse algebraically:

1. Switch x & y
2. Solve for y

Example Three: Find the inverse of the function algebraically.

a) $f(x) = 2x + 4$

$$y = 2x + 4$$

$$x = 2y + 4$$

$$\frac{x-4}{2} = \frac{2y}{2}$$

$$\boxed{\frac{1}{2}x - 2 = y}$$

c) $h(x) = \frac{3}{5}x - 2$

b) $g(x) = 6x$

$$y = 6x$$

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

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

d) $f(x) = 6$

$$y = 6$$

$$\boxed{x = 6}$$