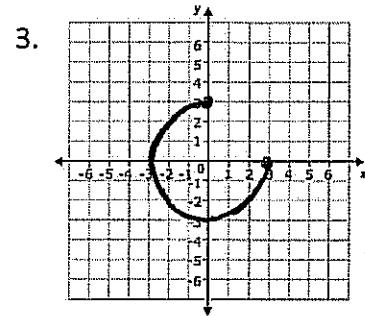
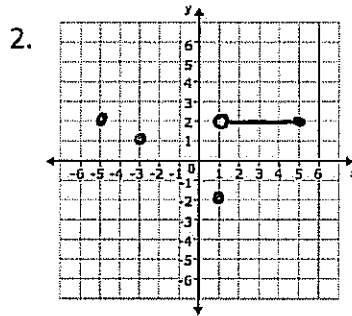


Do all functions have inverses? (Assignment23)

Determine whether or not the relations below are functions.

1.

x	y
1	-4
2	0
3	5
1	2
0	3



4. Using the words "input" and "output" describe how you determined whether each relation above was a function or not.

Both of the relations below are functions, but they may or may not have inverse functions. Try to fill out each table with the inverse.

5.

x	$f(x)$
-2	5
0	10
2	9
4	1
6	π

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

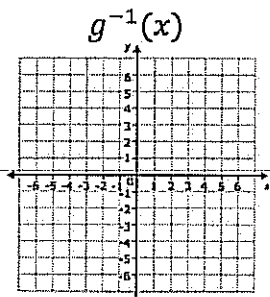
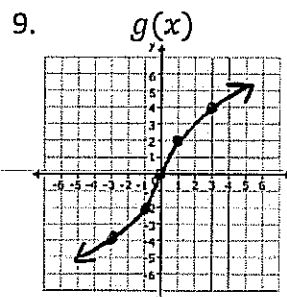
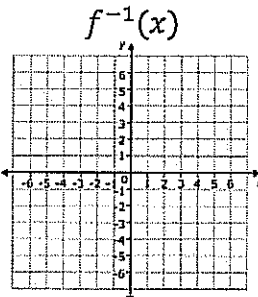
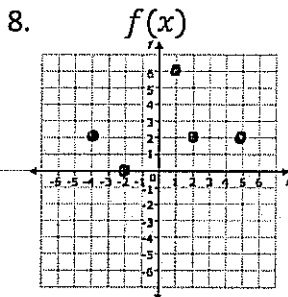
6.

x	$g(x)$
8	3
-2	2
1	5
3	3
7	2

x	$g^{-1}(x)$

7. Look carefully at both tables you've filled out. Are any of inverse relations not functions? Which one(s)?

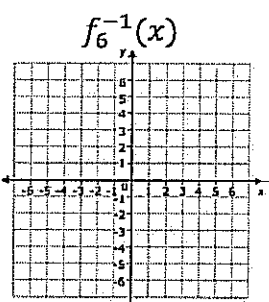
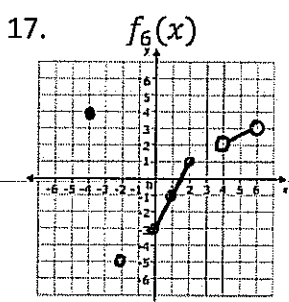
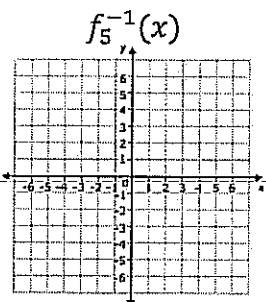
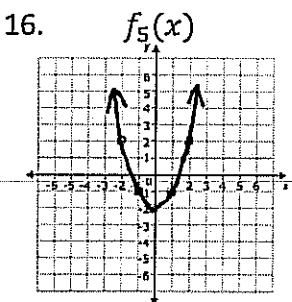
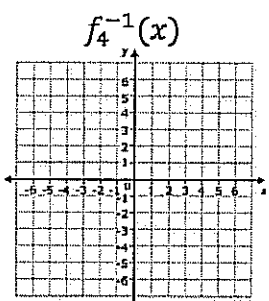
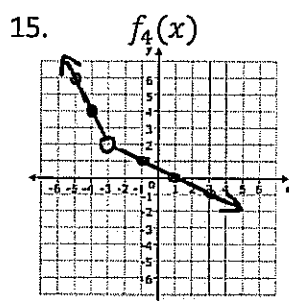
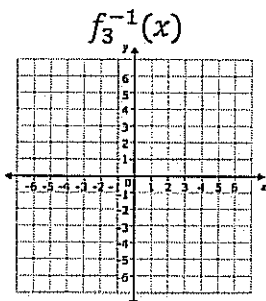
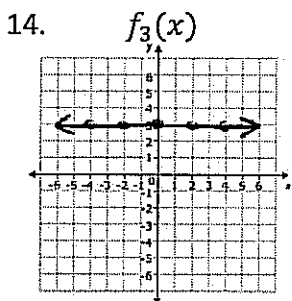
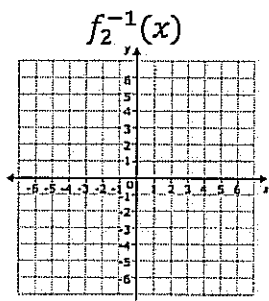
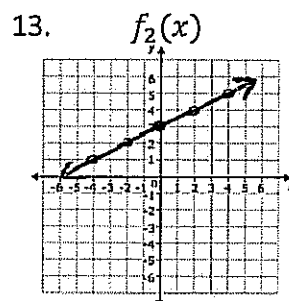
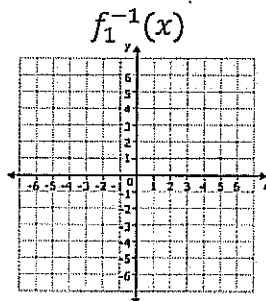
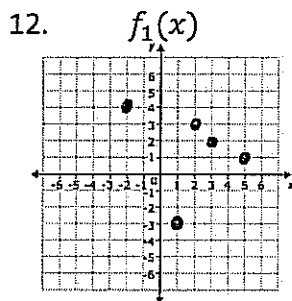
Both of the relations below are functions, but they may or may not have inverse functions. Try to draw an inverse function for each one.



10. Look carefully at all two graphs you've drawn. Are any of inverse relations not functions? Which one(s)?

11. Discuss with your group how it could be possible for something to be a function but it for not have an inverse function. What created the problem? Write your explanation below.

Each of the following relations is a function. For each one, draw the inverse function if it exists. If there is no inverse function, cross off the graph and write "no inverse."



18. The “vertical line test” can be used in order to determine whether or not a relation is a function. Create a similar test to determine whether or not a relation has an inverse function. Explain why your test works.

Make up two functions and draw them below. Create one so that it does have an inverse, and create the other so that it doesn't have an inverse.

