Test 10 (Lessons 19–20): Functions and Their Inverses

1) Find the inverse of the relation. Show this as a table and a mapping. $R = \{(-3, 4), (0, 3), (4, 1), (5, -2)\}$

2) Is the relation a function? Explain. Is the inverse of the relation a function? Explain.

Find the inverse of the function.

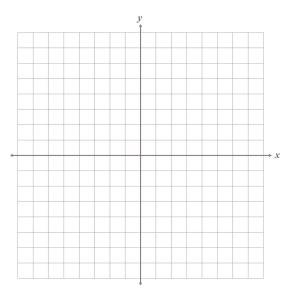
3)
$$f(x) = -\frac{2}{3}x + 5$$

4)
$$j(x) = \sqrt[3]{7-x} - 3$$

Determine the inverse of the function algebraically. Then graph the function and its inverse on the coordinate plane.

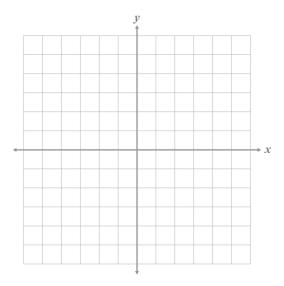
5)
$$g(x) = x^2 + 3$$
 where $x \ge 0$



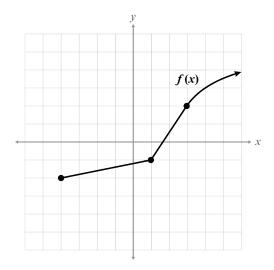


Determine the inverse of the function algebraically. Then graph the function and its inverse on the coordinate plane.

7)
$$f(x) = 2x - 1$$

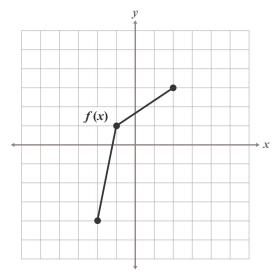


9) Name the domain and range for the given function and its inverse.



10) Explain whether or not the function is one-to-one **and** whether or not the inverse is also a function.

11) Graph the inverse.



12) Explain how you know that the inverse in problem 11 is also a function.