

AA3 PRACTICE TEST : Inverses

Read the directions. Show all your work. Use function notation to designate the inverse functions.

C LEVEL

1. Given the table of values of a function below, fill in a table of values for the inverse. Then, determine if the inverse is a function.

x	-3	-1	1	2	3
$f(x)$	0	3	-1	-2	3

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

Is $f^{-1}(x)$ a function? Y / N.

2. Find the inverse of the functions, then state if the inverse is a function by circling Y (yes) or N (no).

a. $g(x) = 3x + 4$

b. $h(x) = 2x^2 - 1$

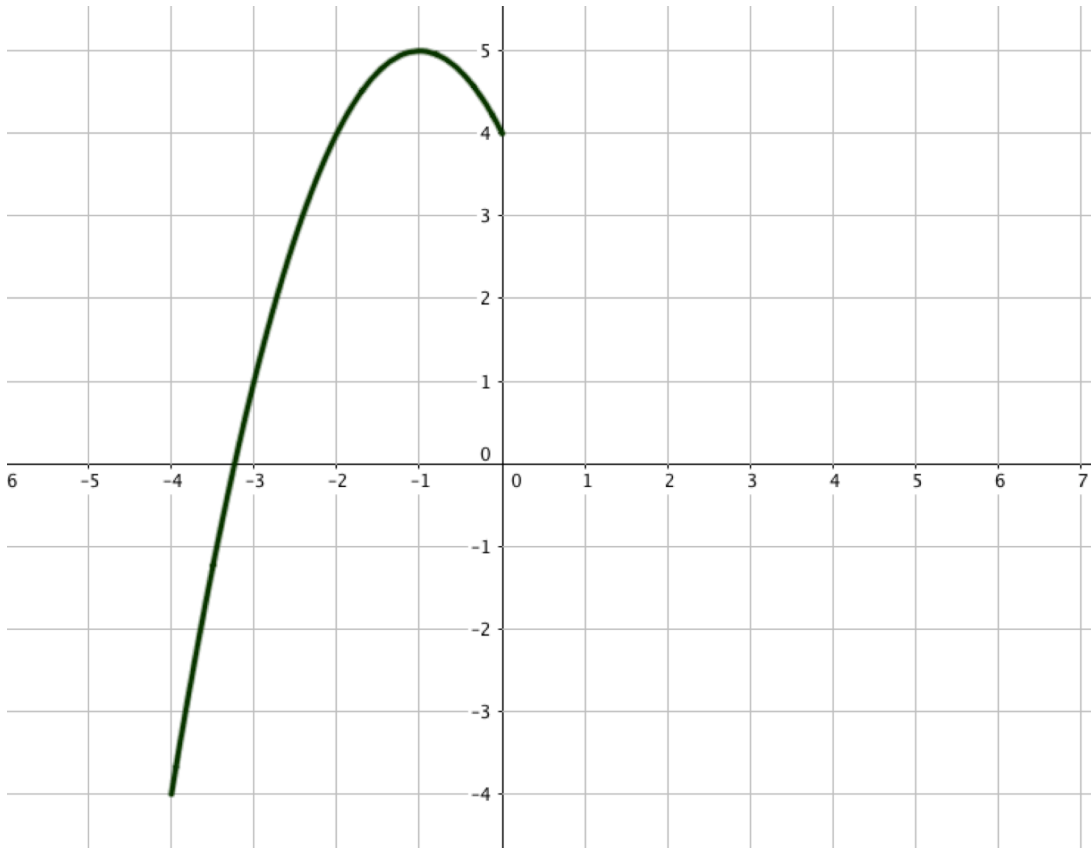
Is $g^{-1}(x)$ a function? Y / N

Is $h^{-1}(x)$ a function? Y / N

3. The relation S is defined by $\{(2, 0), (3, 1), (-1, 4), (-3, -2), (4, 2), (-2, 5)\}$. Give the inverse relation **and** state if the inverse is a function.

Is S^{-1} a function? Y / N

4. Graph the inverse of the graph **and** the line of reflection.



Is the inverse graph a function? Y / N

B LEVEL

5. Find the inverse of the following functions. Then, answer the questions that follow.

a. $g(x) = -7x + 2$

Is $g^{-1}(x)$ a function? Y / N Slope of $g^{-1}(x) =$ _____ y-intercept of $g^{-1}(x) =$ _____

b. $h(x) = (x - 3)^2 - 1$

Is $h^{-1}(x)$ a function? Y / N Domain of $h^{-1}(x) =$ _____ Range of $h^{-1}(x) =$ _____

6. Verify that the functions, $h(x)$ and $g(x)$, are inverses. **Show all your work.**

$$h(x) = -3x + 4 \qquad g(x) = -\frac{x - 4}{3}$$