

INTRO TO INVERSE FUNCTIONS

Inverse function is a function that reverses the original function. The notation for the inverse of a function, say $h(x)$, is _____. If $f(x)$ and $g(x)$ are functions, then $f^{-1}(x)$ and $g^{-1}(x)$ are their inverses.

I. RELATIONS

We find the inverse of a function by swapping the _____ and _____ values.

For example, if we have a **relation**, aka a set of ordered pairs, $\{(0,1), (1, -2), (2, -5)\}$, then the inverse would be $\{(\quad), (\quad), (\quad)\}$.

Now you try. Find the inverse of the relations.

1. $S_1 = \{(1,1), (2, -1), (3, -5), (4, 0), (6, 11)\}$

2. $S_2 = \{(-3, 1), (0, 0), (2, 3), (5, 4)\}$

II. FUNCTIONS

If we are given a function, we can find the inverse function by swapping the _____ and _____, then solving for _____. For example, if we have the function, $f(x) = 2x + 1$, then $f^{-1}(x) = \underline{\hspace{2cm}}$.

Now you try. Find the inverse of the functions.

1. $f(x) = -4x + 1$

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

2. $g(x) = x^2$

4. $j(x) = \frac{1}{x}$

III. GRAPHS

The inverse of a graph is simply a reflection about the line _____. One way to sketch the inverse of a graph is to identify coordinate points, switch the _____ and _____ values, plot the new points, then sketch the inverse graph.

Sketch the inverse of the graph below.

