Inverse Functions

You already regularly use inverses in algebra and arithmetic.
Recall

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_____ pairs are typically used to _____ and _____.

Finding the Inverse of a Relation

To find the _____ of a _____,

_____ the _____ of each _____.

i.e., _____ becomes _____

ex. find the inverse of the _____/_____ :

note: both the _____ set and the inverse set are _____ [How do you know?]

ex. find the inverse of:

Inverse Function Notation:

Steps to Find the Inverse of a Function:

1. .
2. .
3. .
4.

ex. Find the inverse of _____.

Follow up Question: find _____

ex. Find the inverse of _____.

When Function Contains a Fraction

ex. Find the inverse of _____.

Practice

Do: Find the inverse of _____.

Do: Find the inverse of _____.

Do: Find the inverse of _____.

Inverse Properties

Domain/Range

How to Show Functions are Inverses of Each Other

_____ and _____ are _____ if and only if:

AND

refer back to first example

ex. Use **composition** to show _____ and _____ are

_____ of each other.

Write a conclusion statement:

Do: Use **composition** to show _____ and _____ are

_____ of each other then write a **conclusion statement**.

Conclusion:

Determine if Function Has an Inverse from Graph

Recall Vertical Line Test (VLT):

A _____ is a _____ when EVERY _____ in domain

_____ to _____.

Similarly, the **Horizontal Line Test (HLT)** states that a _____ has an _____ if

a _____ line can be drawn through any part of the _____ and pass

through _____.

However,

_____ and _____ are referred to as _____. How can that be?

Answer: A _____ can be made to _____ by

_____ its _____.

Graphic Relationship Between Function and Inverse