Union and intersection of sets: The union of 2 sets includes all the elements of the sets. The intersection of 2 sets includes the elements that are common in both sets.

Ex. and and

Ex. and

You try:

Find the union and intersection: and

Find the intersection: and

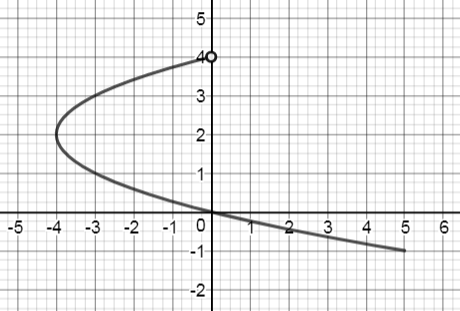
Relation: A set of ordered pairs.

Domain and Range: The domain includes all the x values of the relation. The range contains all the y values.

Given a graph, to find the domain, look to the far left and right of the graph. To find the range, look to the bottom and the top of the graph.

Notation: If the graph has an arrow at the end, use the or symbol. If the graph has a closed dot, use a bracket . If it is an open circle or an arrow, use a parenthesis.

Function: A set in which each element of the domain is matched with exactly one element of the range (all x values must be different in order to be a function). In a graph, it is a function if you can draw a vertical line anywhere and only hit the graph once.



|  |  |
| --- | --- |
| **X** | **Y** |
| **-3** | **5** |
| **4** | **-2** |
| **4** | **7** |
| **7** | **8** |

**Ex.**

Is this a function?

No (fails the vertical line test)

Domain:

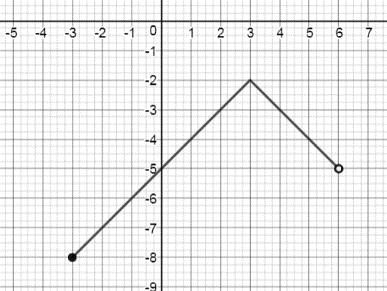
Range:

Is this a function?

No (x values repeat)

Domain:

Range:

You try:

Is this a function?

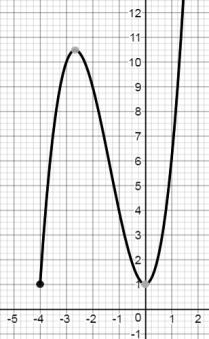
Domain:

Range:

Is this a function?

Domain:

Range:



Math with functions: Given functions and

asks you to add the 2 functions

wants you to plug 3 into that expression, so

ask you to plug the *b* equation into the *a* equation for x

ask you to plug the *a* equation into the *b* equation for x

You try: Given

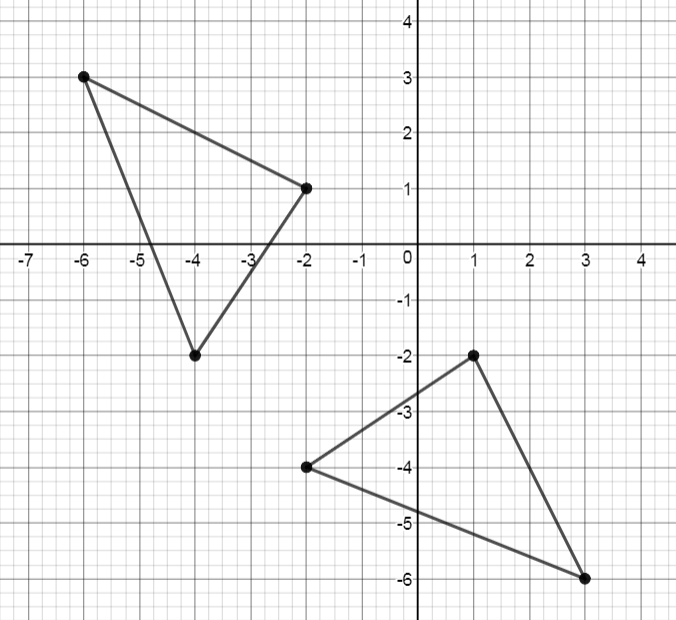
Inverse: The inverse of a set of ordered pairs with domain of x and range of y has a domain of y and a range of x.

Ex. Given ordered pairs, flip the x and y Inverse of is Inverse of is

Given a graph, find key points, flip the to

Inverse

Original

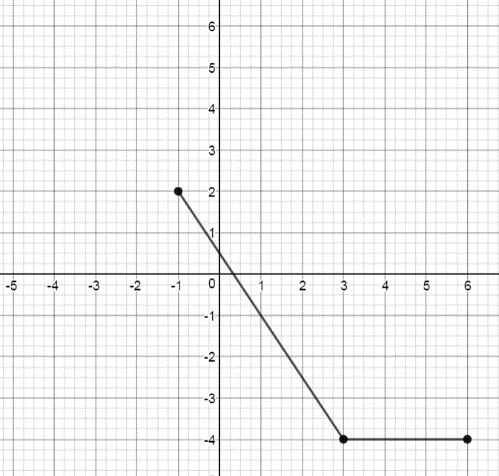
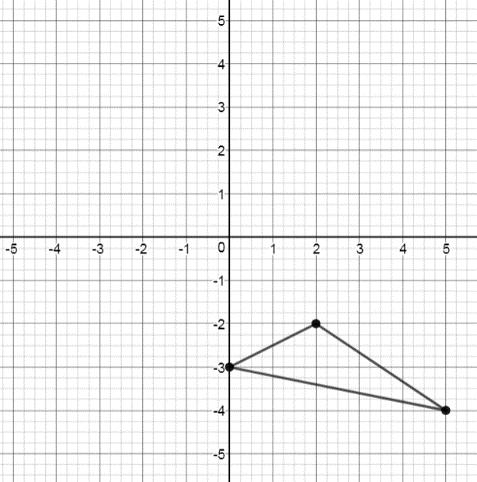
Original

|  |  |
| --- | --- |
| X | Y |
| -6 | 3 |
| -4 | -2 |
| -2 | 1 |

Inverse

|  |  |
| --- | --- |
| X | Y |
| 3 | -6 |
| -2 | -4 |
| 1 | -2 |

You try: Graph the inverse.



Finding the inverse of an equation: Flip the x and y, then re-solve for y.

Ex.

You try: Find the inverse of the equation.