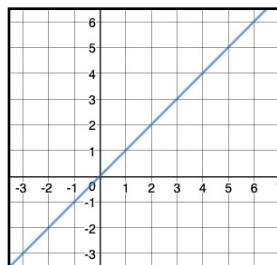


**Inverse equations:** Given two equations/graphs, they are inverses if they display the following attributes:

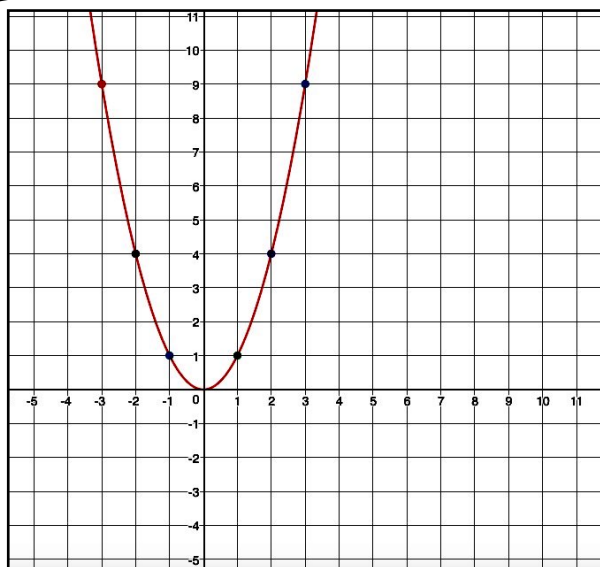
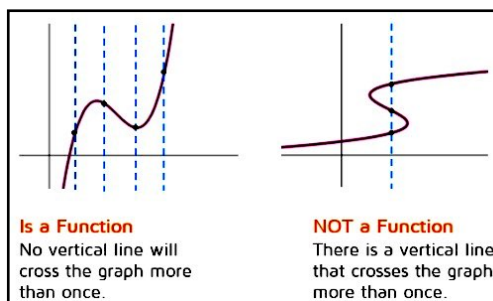
- The x values and y values have switched
- The Domain and Range have switched.
- The Graphs reflect over the  $y=x$  line.



**One - to - One Functions:** Two equations/graphs are one - to - one if they

- inverses of one another AND
- BOTH functions.

VERTICAL LINE TEST FOR FUNCTIONS



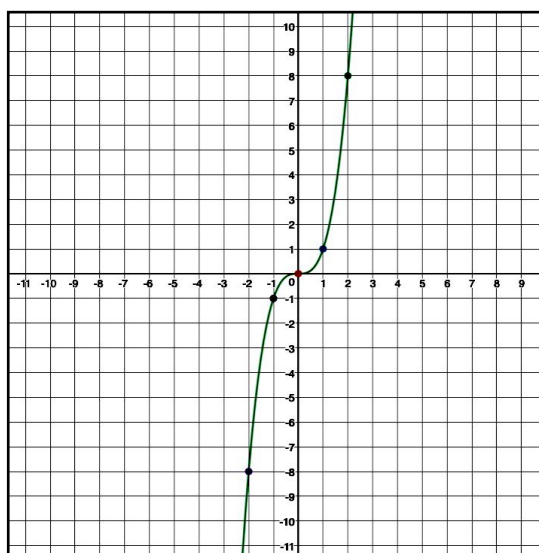
$$y = x^2$$

Original Points

Inverse Points

$(-3, \underline{\quad})$	$\longrightarrow$	$(\underline{\quad}, \underline{\quad})$
$(-2, \underline{\quad})$	$\longrightarrow$	$(\underline{\quad}, \underline{\quad})$
$(-1, \underline{\quad})$	$\longrightarrow$	$(\underline{\quad}, \underline{\quad})$
$(0, \underline{\quad})$	$\longrightarrow$	$(\underline{\quad}, \underline{\quad})$
$(1, \underline{\quad})$	$\longrightarrow$	$(\underline{\quad}, \underline{\quad})$
$(2, \underline{\quad})$	$\longrightarrow$	$(\underline{\quad}, \underline{\quad})$
$(3, \underline{\quad})$	$\longrightarrow$	$(\underline{\quad}, \underline{\quad})$

Are the graphs inverses or relations? \_\_\_\_\_



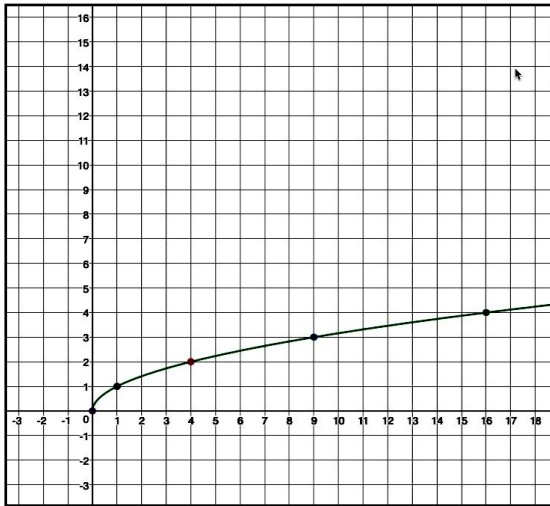
$$y = x^3$$

Original Points

Inverse Points

$(-2, \underline{\quad})$	$\longrightarrow$	$(\underline{\quad}, \underline{\quad})$
$(-1, \underline{\quad})$	$\longrightarrow$	$(\underline{\quad}, \underline{\quad})$
$(0, \underline{\quad})$	$\longrightarrow$	$(\underline{\quad}, \underline{\quad})$
$(1, \underline{\quad})$	$\longrightarrow$	$(\underline{\quad}, \underline{\quad})$
$(2, \underline{\quad})$	$\longrightarrow$	$(\underline{\quad}, \underline{\quad})$

Are the graphs inverses or relations? \_\_\_\_\_



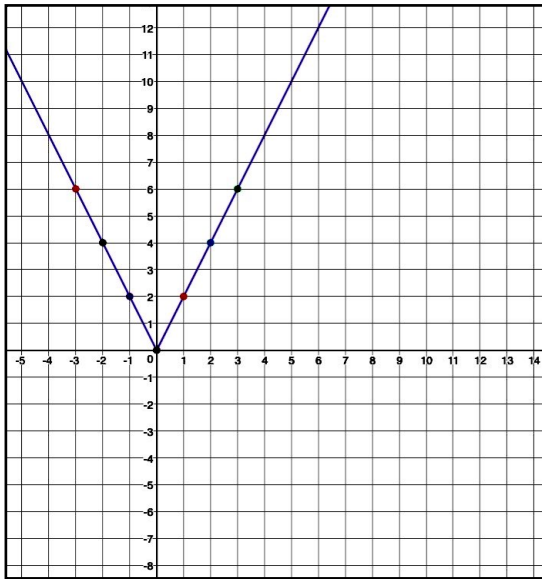
$$y = \sqrt{x}$$

Original Points

Inverse Points

- |               |   |                 |
|---------------|---|-----------------|
| ( 0 , ____ )  | → | ( ____ , ____ ) |
| ( 1 , ____ )  | → | ( ____ , ____ ) |
| ( 4 , ____ )  | → | ( ____ , ____ ) |
| ( 9 , ____ )  | → | ( ____ , ____ ) |
| ( 16 , ____ ) | → | ( ____ , ____ ) |

Are the graphs inverses or relations? \_\_\_\_\_



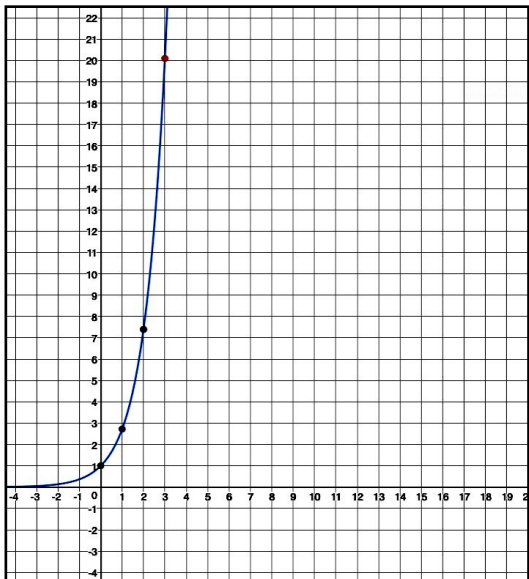
$$y = 2|x|$$

Original Points

Inverse Points

- |               |   |                 |
|---------------|---|-----------------|
| ( -3 , ____ ) | → | ( ____ , ____ ) |
| ( -2 , ____ ) | → | ( ____ , ____ ) |
| ( -1 , ____ ) | → | ( ____ , ____ ) |
| ( 0 , ____ )  | → | ( ____ , ____ ) |
| ( 1 , ____ )  | → | ( ____ , ____ ) |
| ( 2 , ____ )  | → | ( ____ , ____ ) |
| ( 3 , ____ )  | → | ( ____ , ____ ) |

Are the graphs inverses or relations? \_\_\_\_\_



$$y = e^x$$

Original Points

Inverse Points

- |               |   |                 |
|---------------|---|-----------------|
| ( -3 , ____ ) | → | ( ____ , ____ ) |
| ( -2 , ____ ) | → | ( ____ , ____ ) |
| ( -1 , ____ ) | → | ( ____ , ____ ) |
| ( 0 , ____ )  | → | ( ____ , ____ ) |
| ( 1 , ____ )  | → | ( ____ , ____ ) |
| ( 2 , ____ )  | → | ( ____ , ____ ) |
| ( 3 , ____ )  | → | ( ____ , ____ ) |

Are the graphs inverses or relations? \_\_\_\_\_