Determine the Inverse from a Table of Values

The term “**inverse”** means “**opposite**.” For example, the inverse of positive is negative. Fill in the blanks.

 The inverse of addition is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The inverse of multiplication is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 The inverse of a square is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The inverse of *x* is \_\_\_\_\_\_\_\_\_\_\_.

For the problems below, you will be creating the inverse of the tables and graphs. First, create the table or the graph (depending on what you’re given). Then, write the inverse of the table and graph it. To write the inverse, you will make *x* and *y* into their opposites—each other. To put it simply, switch the *x*-values with the *y*-values

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| 1. a. Graph the relation, assuming that it is continuous.

|  |  |
| --- | --- |
| $$x$$ | $$y$$ |
| -2 | 8 |
| -1 | 5 |
| 0 | 2 |
| 1 | -1 |
| 2 | -4 |

 | b. Determine the inverse of the table, then graph it.

|  |  |
| --- | --- |
| $$x$$ | $$y$$ |
|  |  |
|  |  |
|  |  |
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 |
| c. Is the relation a function? Why or why not? | d. Is the inverse a function? Why or why not? |
| e. A function is called a “one-to-one function” if *both* the relation and its inverse are functions.  Is this relation a one-to-one function? |

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| 2. a. Graph the relation, assuming that it is continuous.

|  |  |
| --- | --- |
| $$x$$ | $$y$$ |
| -2 | 7 |
| -1 | 4 |
| 0 | 3 |
| 1 | 4 |
| 2 | 7 |

 | b. Determine the inverse of the table, then graph it.

|  |  |
| --- | --- |
| $$x$$ | $$y$$ |
|  |  |
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 |
| c. Is the relation a function? Why or why not? | d. Is the inverse a function? Why or why not? |
| e. A function is called a “one-to-one function” if *both* the relation and its inverse are functions.  Is this relation a one-to-one function? |

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| 3. a. Graph the relation, assuming that it is continuous.

|  |  |
| --- | --- |
| $$x$$ | $$y$$ |
| -2 | 5 |
| -1 | 6 |
| 0 | 7 |
| 1 | 7 |
| 2 | 7 |

 | b. Determine the inverse of the table, then graph it.

|  |  |
| --- | --- |
| $$x$$ | $$y$$ |
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| c. Is this relation a one-to-one function? Why or why not? |

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| 4. a. Graph the relation, assuming that it is continuous.

|  |  |
| --- | --- |
| $$x$$ | $$y$$ |
| -2 | 0.25 |
| -1 | 0.5 |
| 0 | 1 |
| 1 | 2 |
| 2 | 4 |

 | b. Determine the inverse of the table, then graph it.

|  |  |
| --- | --- |
| $$x$$ | $$y$$ |
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| c. Is this relation a one-to-one function? Why or why not? |

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| 5. a. Graph the relation, assuming that it is continuous.

|  |  |
| --- | --- |
| $$x$$ | $$y$$ |
| -2 | -6 |
| -1 | -3 |
| 0 | -2 |
| 1 | -3 |
| 2 | -6 |

 | b. Determine the inverse of the table, then graph it.

|  |  |
| --- | --- |
| $$x$$ | $$y$$ |
|  |  |
|  |  |
|  |  |
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| c. Is this relation a one-to-one function? Why or why not? |