

Name: _____

Date: _____

Functions: Rules, Tables, Graphs, & Mapping

Define the following.

1. Function:

2. Linear:

3. Non-linear:

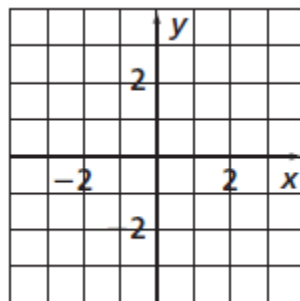
4. Domain:

5. Range:

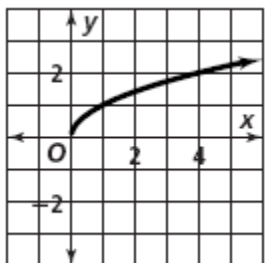
Vertical-line test: if a vertical line on a graph passes through more than 1 point, it is not a function.

6. **Using the Vertical-Line Test:** Determine whether the relation

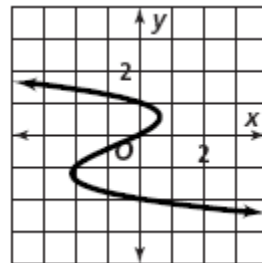
$\{(0,-2), (1,-2), (-3, 1), (-2, 0), (-1,-1), (3, 2), (2,-3)\}$ is a function.



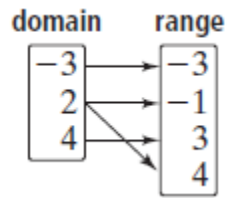
a.



b.



7. **Using a Mapping Diagram:** Determine whether each relation is a function.
 $\{(4, 3), (2,-1), (-3,-3), (2, 4)\}$



8. Use a mapping diagram to determine whether each relation is a function.
a. $\{(3, -2), (8, 1), (9, 2), (3, 3), (-4, 0)\}$ **b.** $\{(6.5, 0), (7, -1), (6, 2), (2, 6), (5, -1)\}$

9. **Making a Table From a Function Rule**

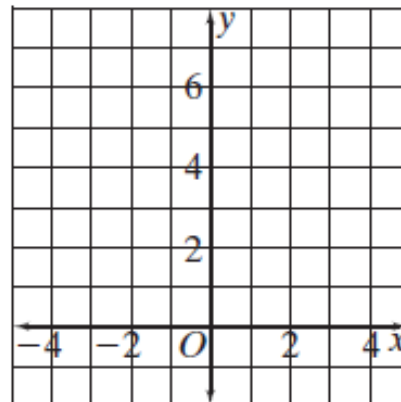
Make a table for $-5x + 25 = y$ and evaluate the function to find the range for the domain values of $\{-2, 0, 2, 4\}$.

| x | | y | |
|----------|--|----------|--|
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10. Graphing Functions

Make a table of values and graph the function $y = |x| + 2$.

| x | $y = x + 2$ | (x, y) |
|-----|-----------------------------|------------------------|
| -3 | $y = \square + 2 = \square$ | $(\square), (\square)$ |
| -1 | $y = \square + 2 = \square$ | $(\square), (\square)$ |
| 0 | $y = \square + 2 = \square$ | $(\square), (\square)$ |
| 1 | $y = \square + 2 = \square$ | $(\square), (\square)$ |
| 3 | $y = \square + 2 = \square$ | $(\square), (\square)$ |



11. Determining solutions

a) Is the ordered pair $(-2, -2)$ a solution to the function $y = 3x - 8$?

b) Is the ordered pair $(-3, 7)$ a solution to the function $y = -\frac{2}{3}x + 5$?

Three Different Views:

1. Determine whether the relation $\{(0, 2), (1, -1), (-1, 4), (0, -3), (2, 1)\}$ is a function.

2. Evaluate the function $y = 8 - 3x$ to find the range for the domain values of $\left\{-3, 0, 1\frac{1}{4}, 2.3\right\}$.

3. Make a table of values and graph each function.
a. $y = |x| - 1$ **b.** $y = x^2 - 1$

| x | y |
|---|---|
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| | |

| x | y |
|---|---|
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