4-4 Reteaching

Graphing a Function Rule

By finding values that satisfy a function rule, you can graph points and discover the shape of its graph.

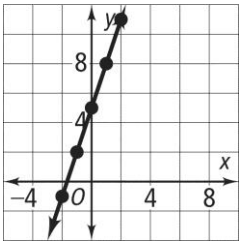
Problem

What is the graph of the function rule $y = 3x + 5$?

First, choose any values for x and find the corresponding values of y. Make a table of your values.

x	$y = 3x + 5$	(x, y)
−2	$y = 3(-2) + 5 = -1$	(−2, −1)
−1	$y = 3(-1) + 5 = 2$	(−1, 2)
0	$y = 3(0) + 5 = 5$	(0, 5)
1	$y = 3(1) + 5 = 8$	(1, 8)
2	$y = 3(2) + 5 = 11$	(2, 11)

Then, graph the points from your table. In this case, the points are in a line. Draw the line.



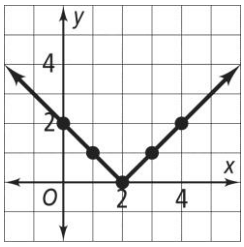
Problem

What is the graph of the function rule $y = |x - 2|$?

First, choose any values for x and find the corresponding values of y. Make a table of your values.

x	$y = \|x - 2\|$	(x, y)
0	$y = \|0 - 2\| = 2$	(0, 2)
1	$y = \|1 - 2\| = 1$	(1, 1)
2	$y = \|2 - 2\| = 0$	(2, 0)
3	$y = \|3 - 2\| = 1$	(3, 1)
4	$y = \|4 - 2\| = 2$	(4, 2)

Then, graph the points from your table. In this case, the points make a V shape. Draw the V.

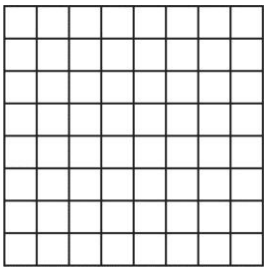


Exercises

Graph each function rule.

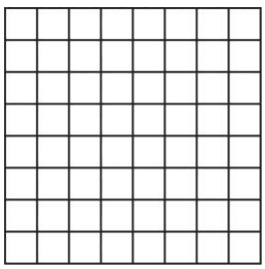
1. $y = \frac{x}{2} + 3$

x	$y = \frac{x}{2} + 3$	(x, y)



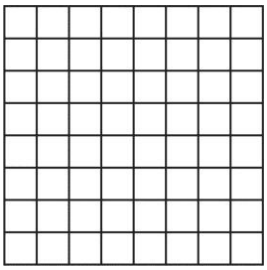
2. $y = -x - 3$

x	$y = -x - 3$	(x, y)



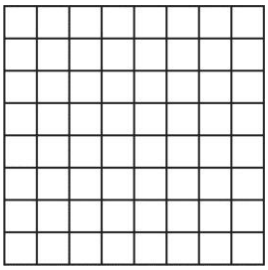
3. $y = x^2 - 3$

x	$y = x^2 - 3$	(x, y)



4. $y = |x| + 1$

x	$y = \|x\| + 1$	(x, y)



Make a table of values and graph each function.

5. The function $f(x) = 175 + x$ represents the amount of money in a savings account that started with \$175 after a deposit of x dollars.

6. The function $f(x) = 4x$ represents the perimeter of a square with side length x.