Possible Solutions

Mary had some money in her savings bank. She spent half of her money and then gave $3 to a local charity. How much money did she have remaining in her piggy bank? After determining the remaining amount of money in her savings account, rewrite this verbal statement in the form of a table, a graph or an equation.
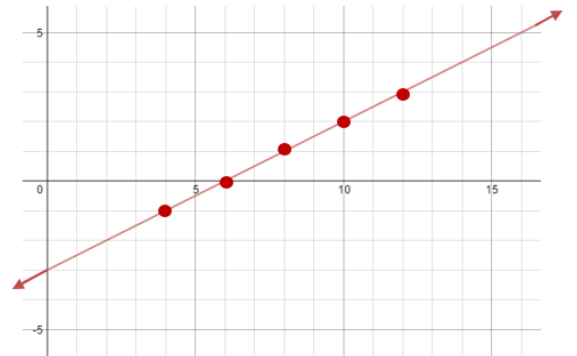
Solution 1

Rewrite as a table:

x	process	y
6	$\frac{1}{2}(6) - 3$	0
8	$\frac{1}{2}(8) - 3$	1
10	$\frac{1}{2}(10) - 3$	2
12	$\frac{1}{2}(12) - 3$	3

Solution 2

Rewrite as a graph using the table of values:

x	process	y
4	$\frac{1}{2}(4) - 3$	-1
6	$\frac{1}{2}(6) - 3$	0
8	$\frac{1}{2}(8) - 3$	1
10	$\frac{1}{2}(10) - 3$	2
12	$\frac{1}{2}(12) - 3$	3

Solution 3

Rewrite as a graph using the table of values:

x	process	y
0	$\frac{1}{2}(0) - 3$	-3
4	$\frac{1}{2}(4) - 3$	-1
6	$\frac{1}{2}(6) - 3$	0

8	$\frac{1}{2}(8) - 3$	1
10	$\frac{1}{2}(10) - 3$	2
12	$\frac{1}{2}(12) - 3$	3

Write an equation in the form y = mx + b. Use the table to find constant rate of change, *m*, and the y-intercept, *b*.

x	process	y
0	$\frac{1}{2}(0) - 3$	-3
4	$\frac{1}{2}(4) - 3$	-1
6	$\frac{1}{2}(6) - 3$	0
8	$\frac{1}{2}(8) - 3$	1
10	$\frac{1}{2}(10) - 3$	2
12	$\frac{1}{2}(12) - 3$	3

+2   +2   +2

+1   +1   +1

$$m = \frac{change\ in\ y\ values}{change\ in\ x\ values} = \frac{1}{2}$$

b can be found by finding the value for *y* when the *x* value is O.

Because the y-intercept form is, y = mx + b, then y = $\frac{1}{2}$x + (-3) or y = $\frac{1}{2}$x – 3.