

Lesson 9-2

Example 1 Real-World Example

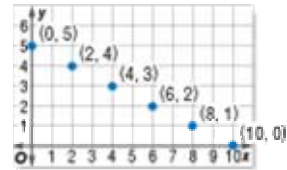
FESTIVAL The school festival sells ride tickets x for \$1 and food tickets y for \$2. Graph the function $x + 2y = 10$ to find how many ride tickets and food tickets Lori can buy with \$10.

First, rewrite the equation by solving for y .

$$\begin{array}{ll} x + 2y = 10 & \text{Write the equation.} \\ x - x + 2y = 10 - x & \text{Subtract } x \text{ from each side.} \\ 2y = 10 - x & \text{Simplify.} \\ y = 5 - 0.5x & \text{Divide both sides by 2.} \end{array}$$

Choose values for x and substitute them to find y . Then graph the ordered pairs.

x	$y = 5 - 0.5x$	y	(x, y)
0	$y = 5 - 0.5(0)$	5	(0, 5)
2	$y = 5 - 0.5(2)$	4	(2, 4)
4	$y = 5 - 0.5(4)$	3	(4, 3)
6	$y = 5 - 0.5(6)$	2	(6, 2)
8	$y = 5 - 0.5(8)$	1	(8, 1)
10	$y = 5 - 0.5(10)$	0	(10, 0)



She cannot buy negative numbers of tickets, so the solutions are 0 ride tickets and 5 food tickets, 2 ride tickets and 4 food tickets, 4 ride tickets and 3 food tickets, 6 ride tickets and 2 food tickets, 8 ride tickets and 1 food tickets, or 10 ride tickets and 0 food tickets.

Example 2 Graph a Function

Graph $y = x + 3$.

- Choose some values for x . Make a function table. Include a column of ordered pairs of the form (x, y) .
- Graph each ordered pair. Draw a line that passes through each point. Note that the ordered pair for any point on this line is a solution of $y = x + 3$. The line is the complete graph of the function.

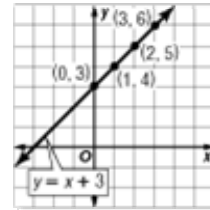
x	$x + 3$	y	(x, y)
0	$0 + 3$	3	(0, 3)
1	$1 + 3$	4	(1, 4)
2	$2 + 3$	5	(2, 5)
3	$3 + 3$	6	(3, 6)

Check It appears from the graph that $(-1, 2)$ is also a solution. Check this by substitution.

$$y = x + 3 \quad \text{Write the function.}$$

$$2 \stackrel{?}{=} -1 + 3 \quad \text{Replace } x \text{ with } -1 \text{ and } y \text{ with } 2.$$

$$2 = 2 \quad \checkmark \quad \text{Simplify.}$$

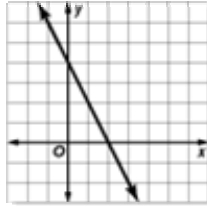


Example 3 STANDARDIZED TEST PRACTICE EXAMPLE

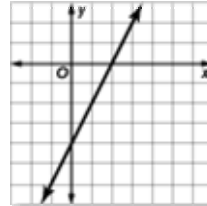
Which line graphed below best represents the table of values for the ordered pairs (x, y) ?

x	y
-2	0
-1	2
0	4
1	6

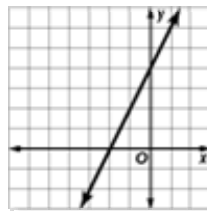
A



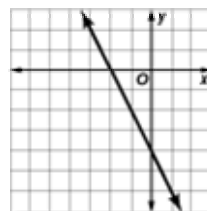
B



C



D



Read the Test Item

You need to decide which of the four graphs represents the data in the table.

Solve the Test Item

The values in the table represent the ordered pairs $(-2, 0)$, $(-1, 2)$, $(0, 4)$, and $(1, 6)$. Test the ordered pairs with each graph. Graph C is the only graph which contains all these ordered pairs. The answer is C.