NAME _____ DATE _____ PERIOD _____

4-4

Equations as Relations

Show the "solving for Y" part and the T-table on looseleaf. You can use the graphs on this page or use your own graph paper. Mr. C.

Graph Solution Sets You can graph the ordered pairs in the solution set of an equation in two variables. The domain contains values represented by the **independent variable**. The range contains the corresponding values represented by the **dependent variable**, which are determined by the given equation.

Example **Solve $4x + 2y = 12$ if the domain is $\{-1, 0, 2, 4\}$. Graph the solution set.**

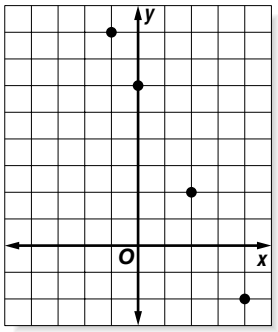
First solve the equation for y in terms of x.

$4x + 2y = 12$	Original equation
$4x + 2y - 4x = 12 - 4x$	Subtract $4x$ from each side.
$2y = 12 - 4x$	Simplify.
$\frac{2y}{2} = \frac{12 - 4x}{2}$	Divide each side by 2.
$y = 6 - 2x$	Simplify.

Substitute each value of x from the domain to determine the corresponding value of y in the range.

x	$6 - 2x$	y	(x, y)
-1	$6 - 2(-1)$	8	$(-1, 8)$
0	$6 - 2(0)$	6	(0, 6)
2	$6 - 2(2)$	2	(2, 2)
4	$6 - 2(4)$	-2	$(4, -2)$

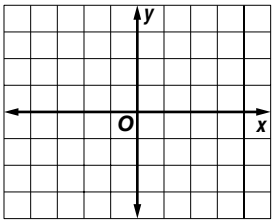
Graph the solution set.



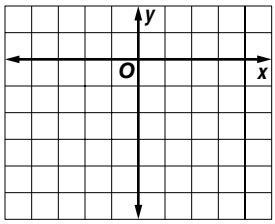
Exercises

Solve each equation for the given domain. Graph the solution set.

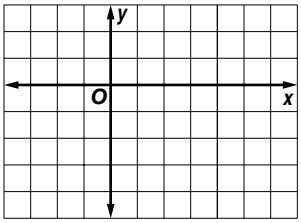
1. $x + 2y = 4$ for $x = \{-2, 0, 2, 4\}$



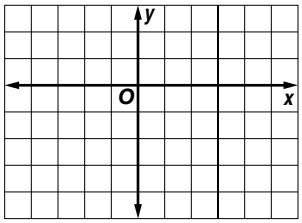
2. $y = -2x - 3$ for $x = \{-2, -1, 0, 1\}$



3. $x - 3y = 6$ for $x = \{-3, 0, 3, 6\}$



4. $2x - 4y = 8$



Since no domain is given in problem 4, assume it is "All Real Numbers." For the T Table, you pick the X values. Draw the line through the points, with arrows, and label the graph properly.