5-3 Equations as Relations

What you'll learn

- To determine the range for a given domain, and
- to graph the solution set for the given domain.

Definition of the Solution of an Equation in Two Variables

- If a true statement results when the numbers in an ordered pair are substituted into an equation in two variables, then the ordered pair is a solution of the equation.
- Use T-tables to find the solution set.

x	Plug & chug	y	(x,y)

Example 1

Solve $y = -\frac{1}{3}x$, if the domain is {-3, 0, 2, 6, 8}.

{(-3,1), (0,0), (2, $-\frac{2}{3}$), (6,-2), (8, $-\frac{8}{3}$)}.

x	$-\frac{1}{3}x$	y	(x, y)
-3	$-\frac{1}{3}(-3)$	1	(-3,1)
0	$-\frac{1}{3}(0)$	0	(0,0)
2	$-\frac{1}{3}(2)$	$-\frac{2}{3}$	$\left(2,-\frac{2}{3}\right)$
6	$-\frac{1}{3}(6)$	-2	(6,-2)
8	$-\frac{1}{3}(8)$	$-\frac{8}{3}$	$\left(8,-\frac{8}{3}\right)$

Example 2

Solve y= -2x + 1, if the domain is {-4, -2, 0, 2, 4}.

{(-4,9), (-2,5), (0, 1), (2,-3), (4, -7)}.

x	-2x + 1	y	(x, y)
-4	-2(-4) + 1	9	(-4,9)
-2	-2(-2) + 1	5	(-2,5)
0	-2(0) + 1	1	(0,1)
2	-2(2) + 1	-3	(2,-3)
4	-2(4) + 1	-7	(4,-7)