



Algebra I

Lesson 4-4

- I can use an equation to determine the range for a given domain.
- I can graph the solution set for a given domain.

The equation $p = 45w$ is an example of an equation in two variables. A solution of an equation in two variables is an ordered pair that results in a true statement when substituted into the equation.

Solve Using a Replacement Set

Find the solution set for $y = 2x + 3$, given the replacement set $\{(-2, -1), (-1, 3), (0, 4), (3, 9)\}$

x	y	$y = 2x + 3$	T or F
-2	-1	$-1 = 2(-2) + 3$ $-1 = -1$	T
-1	3	$3 = 2(-1) + 3$ $3 = 1$	F
0	4	$4 = 2(0) + 3$ $4 = 3$	F
3	9	$9 = 2(3) + 3$ $9 = 9$	T

Solution set $\{(-2, -1), (3, 9)\}$

Solve Using a Given Domain

Solve $b = a + 5$ if the domain is $\{-3, -1, 0, 2, 4\}$

a	$b = a + 5$	(a, b)
-3	$b = -3 + 5$ $b = 2$	$(-3, 2)$
-1	$b = -1 + 5$ $b = 4$	$(-1, 4)$
0	$b = 0 + 5$ $b = 5$	$(0, 5)$
2	$b = 2 + 5$ $b = 7$	$(2, 7)$
4	$b = 4 + 5$ $b = 9$	$(4, 9)$

Solution Set $\{(-3, 2), (-1, 4), (0, 5), (2, 7), (4, 9)\}$

Solve and Graph the Solution Set

Solve $4x + 2y = 10$ if the domain is $\{-1, 0, 2, 4\}$. Graph the solution set.

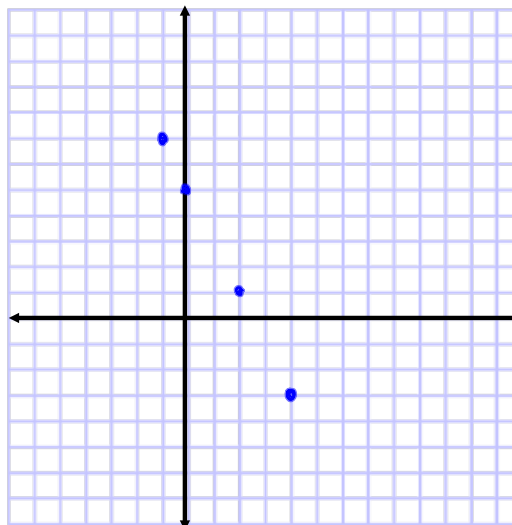
$$\begin{array}{r} -4x \quad -4x \\ \hline 2y = 10 + -4x \\ \hline y = 5 + -2x \end{array}$$

$$(-1, 7)$$

$$(0, 5)$$

$$(2, 1)$$

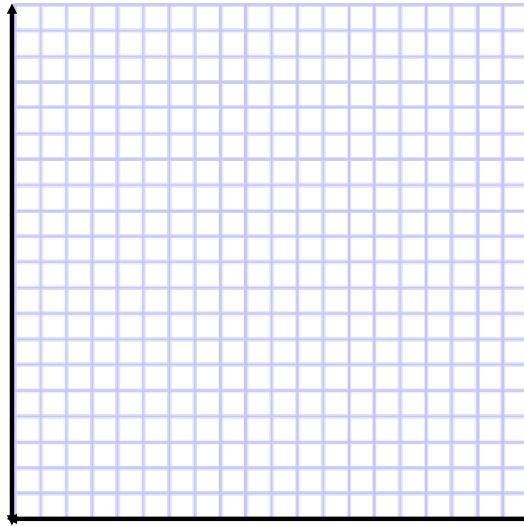
$$(4, -3)$$



Since pure gold is very soft, other metals are often added to it to make an alloy that is stronger and more durable. The relative amount of gold in a piece of jewelry is measured in karats. The formula for the relationship is $g = \frac{25k}{6}$, where k is the number of karats and g is the percent of gold in the jewelry.

Find the percent of gold if the domain is $\{10, 14, 18, 24\}$. Make a table of values and graph the function. How many karats are in a ring that is 50% gold?

K	g
10	41.67
14	58.3
18	75
24	100



Assignment:

Pgs. 215-217 #18-36 even, 38-39, 67-70 all

