Lesson 3-3

Example 1:

$4 \cdot 3 - 2 = 10$

a. Circle all the ordered pairs (x, y) that are solutions to the equation $4x - y = 10$.

x y

$(3,2)$ $(2,3)$ $(-1,-14)$ $(0,0)$ $(1,-6)$

x y

$(5,10)$ $(0,-10)$ $(3,4)$ $(6,0)$ $(4,-1)$

Recall that a **solution** makes the equation **true**.

b. How did you decide whether or not an ordered pair was a solution to the equation?

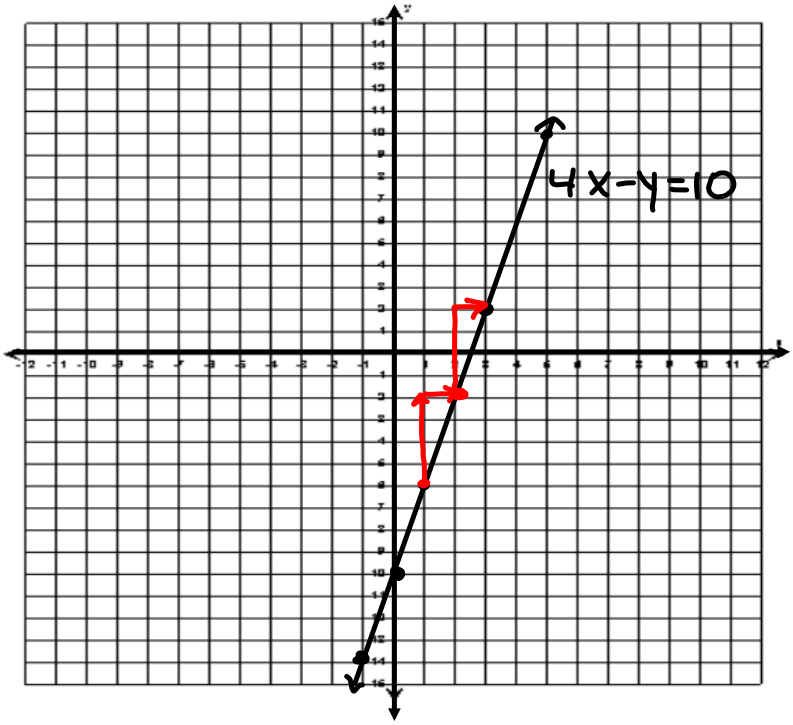
plug the values in for x and y.

c. How many solutions to the equation 4x – y = 10 are there? infinite

d. Organize your solutions in an x, y table.Then graph your ordered pairs (solutions) on the graph provided.

x	y
3	2
-1	-14
1	-6
5	10
0	-10

Name _____ Date _____



$4x - y = 10$

Solve for y:

$4x - 4x - y = -4x + 10$

$\frac{-y}{-1} = \frac{-4x}{-1} + \frac{10}{-1}$

$y = 4x - 10$

Example 2:

Gia had 25 songs in a playlist composed of songs from her two favorite artists, Beyonce and Jennifer Lopez. How many songs did she have by each one in the playlist?

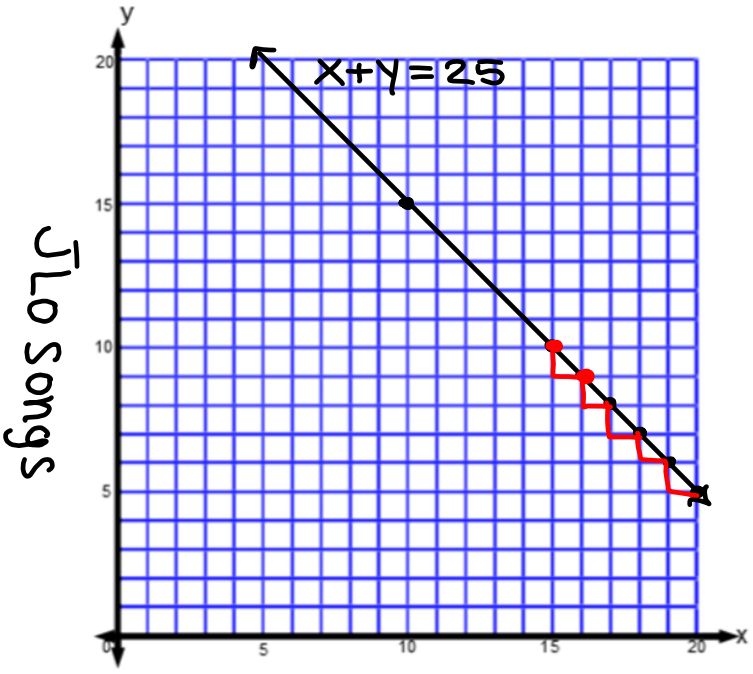
Create an equation using two variables to represent this situation. Be sure to explain the meaning of each variable.

x = Beyonce
y = JLO

x + y = 25
equation

List at least 7 solutions to the equation you created in part (a). (Organize your solutions in an x, y table.)

Create a graph that represents the solution set to the equation.



x	y
10	15
20	5
18	7
19	6
23	2
17	8
16	9
15	10

do in calculator: $x+y=25$, $-x$ $-x$

$y = -1x + 25$

y-int. (b) = 25

$y = mx + b$

Slope (m) = -1

$\frac{\text{rise}}{\text{run}} = \frac{-1}{1}$ $\frac{\text{down 1}}{\text{right}}$

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EXAMPLES (x,y)

1) Which of the following sets of ordered pairs are *all* solutions to the equation $y = 3x - 4$?

A) (-4,-16), (1,-1), (10,-26)
B) (-4,16), (1,-1), (10,26)
C) (-4,-16), (1, -1), (10,26)
D) (-4,-16), (1,1), (10,26)

(-4,-16): $-16 = 3(-4)-4$, $-16 = -16$, yes
(1,-1): $-1 = 3(1)-4$, $-1 = -1$, yes
(10,-26): $-26 = 3(10)-4$, $-26 \neq 26$, no
(10,26): $26 = 3(10)-4$, $26 = 26$, yes

2) Which point does *not* lie on the graph of the equation $2x + y = 3$?

A) $(\frac{1}{2},2)$: $2(\frac{1}{2})+2=3$, $2(.5)+2=3$, $3=3$, yes
B) (0,3): $2(0)+3=3$, $3=3$, yes
C) (-1,5): $2(-1)+5=3$, $-2+5=3$, $3=3$, yes
D) (-1,-1): $2(-1)+(-1)=3$, $-2-1=3$, $-3 \neq 3$, no

(x,y)

3) If $(a,3)$ is a point on the graph of the equation $2x + 3y = 5$, then the value of a is

A) 2 B) 1 C) -2 D) 7

$2x+3y=5$
$2 \cdot a + 3(3) = 5$
$2a + 9 = 5$ solve for a
$-9 \quad -9$
$\frac{2a}{2} = \frac{-4}{2}$
$a = -2$