4.3: Another Form of the Equation for a Linear Relation Worksheet

1. Does each equation describe a vertical, a horizontal, or an oblique line? Describe each vertical or horizontal line.

a) $y = 4$

horizontal line that intersects the y-axis at 4.

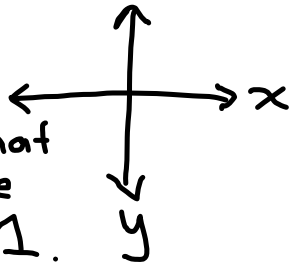
b) $2x + 5 = 7$

$-5 \quad -5$

$\frac{2x}{2} = \frac{2}{2}$

$x = 1$

vertical line that intersects the x-axis at 1.



c) $2x - y = 6$

Oblique because there are 2 variables (xy)

d) $3y + 9 = 0$

$-9 \quad -9$

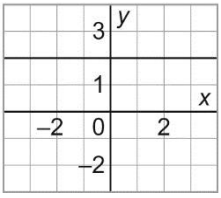
$\frac{3y}{3} = \frac{-9}{3}$

$y = -3$

horizontal line that intersects the y-axis at -3

2. Which equation below describes each graph?

a)

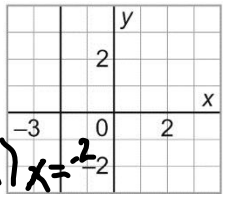


iii) $y = 2$

i) $x = 2$

iii) $y = 2$

b)



ii) $x = -2$

ii) $x = –2$

iv) $y = –2$

3. The sum of two numbers is 8. Let x and y represent the two numbers.

a) Create a table for 5 different values of x.

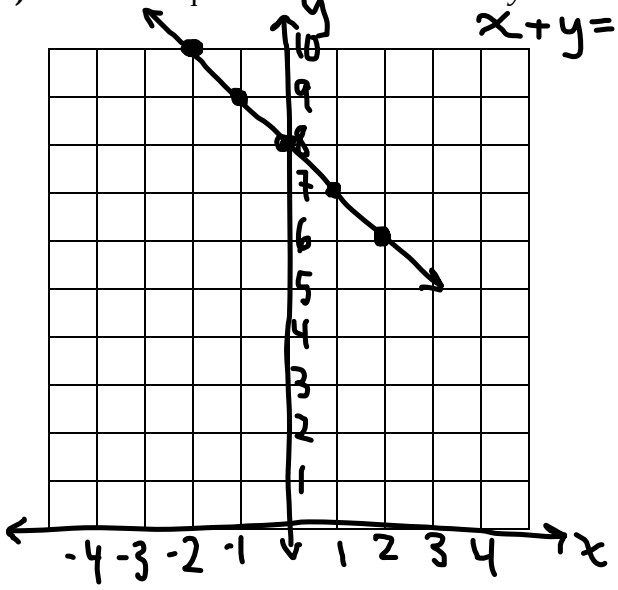
x	y
-2	10
-1	9
0	8
1	7
2	6

b) Graph the data. Should you join the points?

yes because the data is continous.

c) Write an equation that relates x and y.

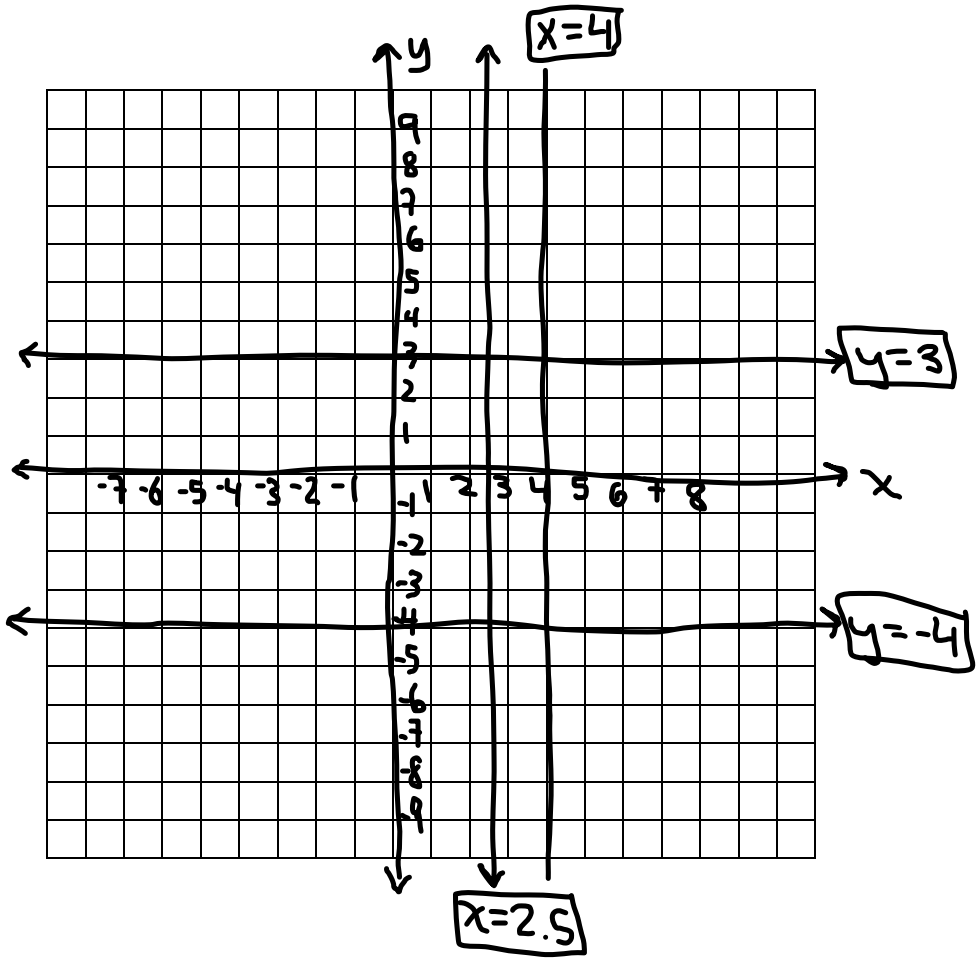
$x + y = 8$



4. Graph each line. Explain your work.

a) $x = 4$ **b)** $2y = 6$

c) $y - 2 = -6$ **d)** $2x + 3 = 8$



b) $\frac{2y}{2} = \frac{6}{2}$

$y = 3$

c) $y - 2 = -6$

$+2 \quad +2$

$y = -4$

d) $2x + 3 = 8$

$-3 \quad -3$

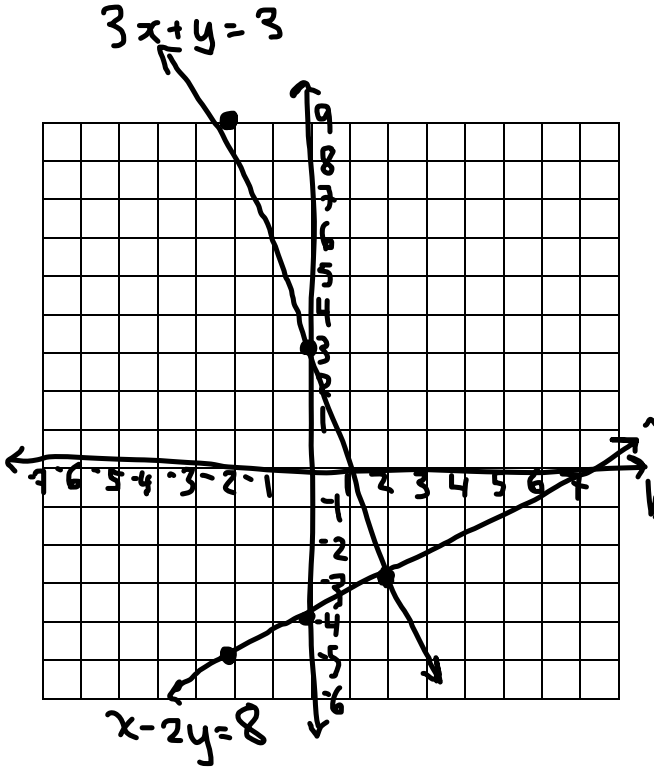
$\frac{2x}{2} = \frac{5}{2}$

$x = 2.5$

5. For each equation below:

- Make a table for the given values of x.
- Graph the equation.

a) $3x + y = 3$; for $x = -2, 0, 2$ **b)** $x - 2y = 8$; for $x = -2, 0, 2$



a)

x	y
-2	9
0	3
2	-3

$x=-2$: $3x+y=3$, $3(-2)+y=3$, $-6+y=3$, $+6$ $+6$, $y=9$

$x=0$: $3x+y=3$, $3(0)+y=3$, $0+y=3$, $y=3$

$x=2$: $3x+y=3$, $3(2)+y=3$, $6+y=3$, -6 -6, $y=-3$

b)

x	y
-2	-5
0	-4
2	-3

$x=-2$: $x-2y=8$, $-2-2y=8$, $+2$ $+2$, $-2y=10$, $\frac{-2y}{-2}=\frac{10}{-2}$, $y=-5$

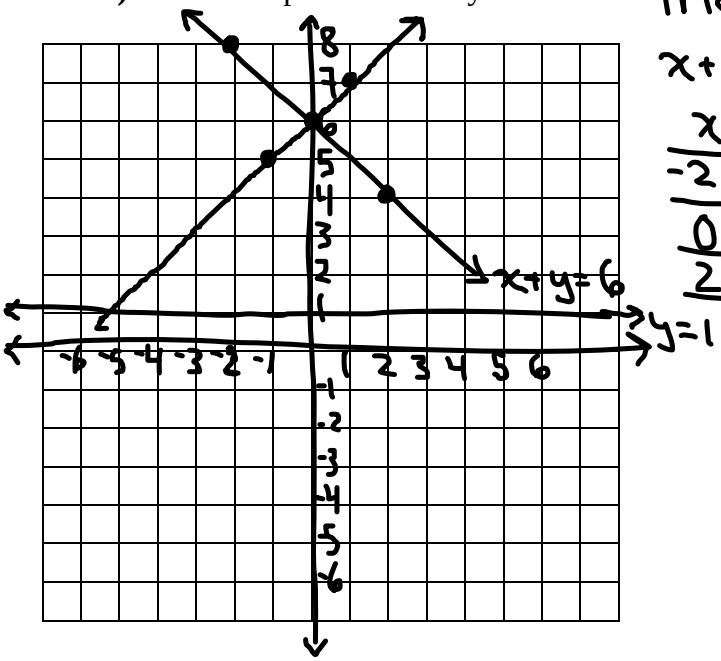
$x=0$: $x-2y=8$, $0-2y=8$, $\frac{-2y}{-2}=\frac{8}{-2}$, $y=-4$

$x=2$: $x-2y=8$, $2-2y=8$, -2 -2, $-2y=6$, $\frac{-2y}{-2}=\frac{6}{-2}$, $y=-3$

6. **a)** Graph these equations on the same grid.

$x + y = 6$ $y = 1$ $x - y = -6$

b) Which shape is formed by these lines? triangle



$x+y=6$

x	y
-2	8
0	6
2	4

$x-y=-6$

x	y
-1	5
0	+6
1	7