

1. Determine if each equation is linear or nonlinear.

- a. $-x = 3y + 10$ *linear*
- b. $x^2 + 2y = 0$ *nonlinear*
- c. $y = 1$ *linear*
- d. $x = y^3$ *nonlinear*
- e. $x = 25$ *linear*
- f. $|x| = y$ *nonlinear*
- g. $x - y = 9$ *linear*

2. Find 3 ordered pairs that satisfy each equation.

a. $x - y = 6$

x	y
6	0
4	-2
5	-1

b. $3x - 2y = 6$

x	y
$-\frac{2}{3}$	-4
$\frac{10}{3}$	2
$-\frac{4}{3}$	-5

c. $y = \frac{1}{3}x$

x	y
0	0
6	2
-3	-1

d. $y = -5x + 2$

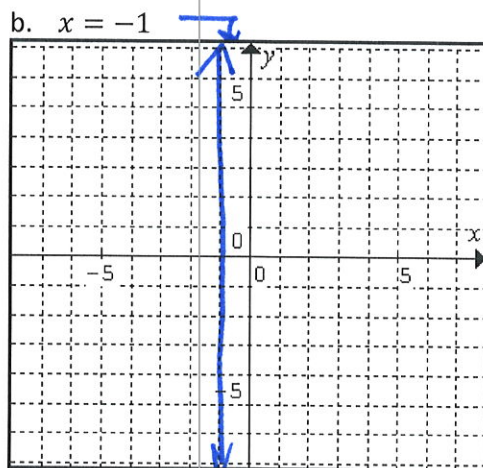
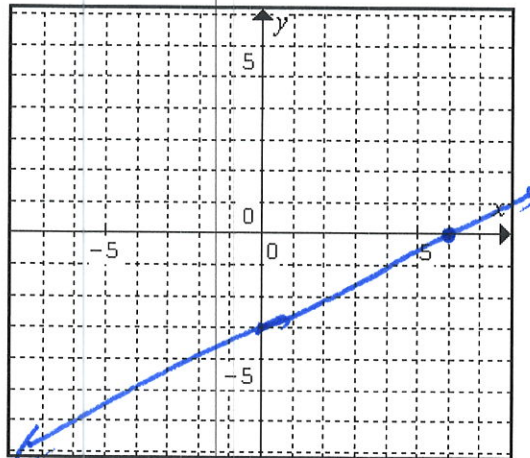
x	y
0	2
1	-3
2	-8


e. $y = -4x + 3$

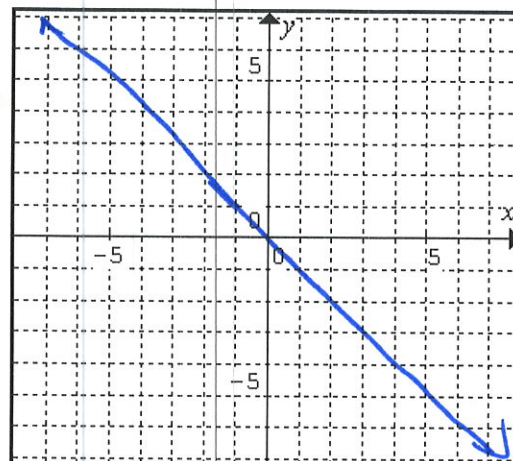
x	y
0	3
1	-1
-1	7


3. Graph each equation.

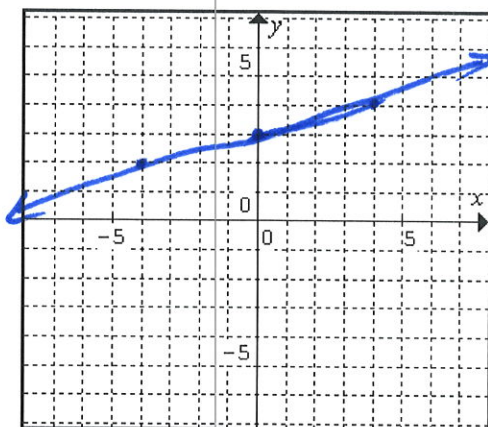
a. $x - 2y = 6$ 



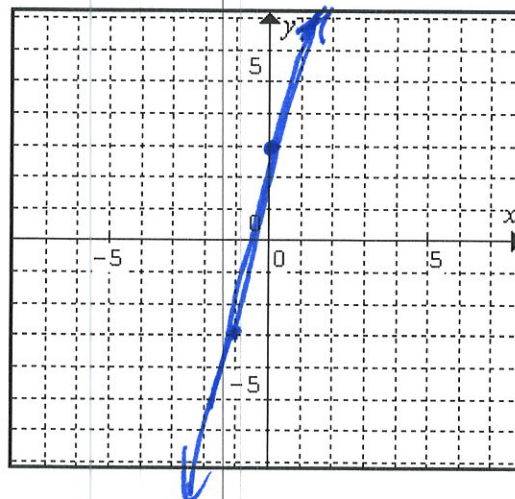
c. $y = -x$ 



d. $y = \frac{1}{4}x + 3$ 



e. $y = 6x + 3$ 

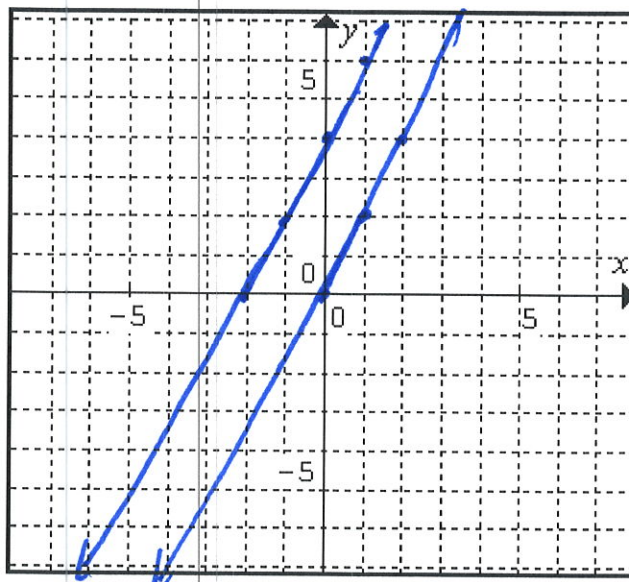


4. Graph each pair of equations on the same graph. In what ways are they similar or different?

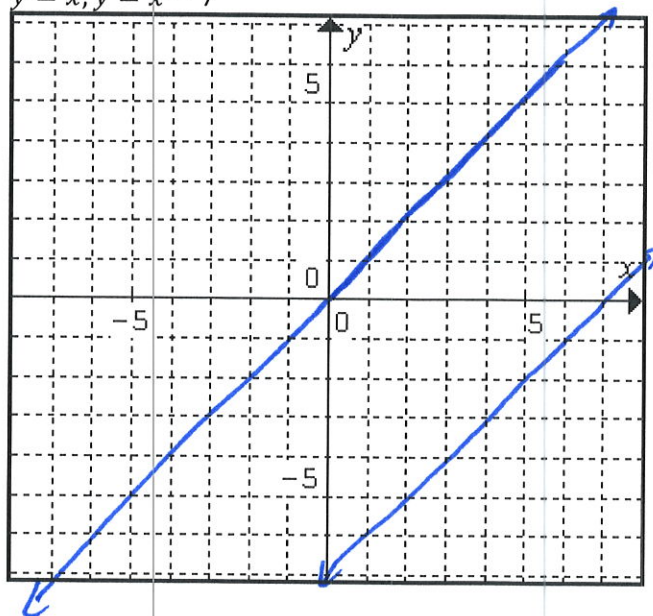
a. $y = 2x, y = 2x + 4$

the # in front of x is the same; the intercepts are different.

The lines appear to be parallel



b. $y = x, y = x - 7$



Similar comment to above

5. Translate each statement into an equation.
- a. The y-value is five more than the x-value.

$$y = x + 5$$

- b. Twice the x-value added to three times the y-value is six.

$$2x + 3y = 6$$