

3 – Another Form of the Equation for a Linear Relation

Focus: Recognize the equations of horizontal, vertical, and oblique lines, and graph them.

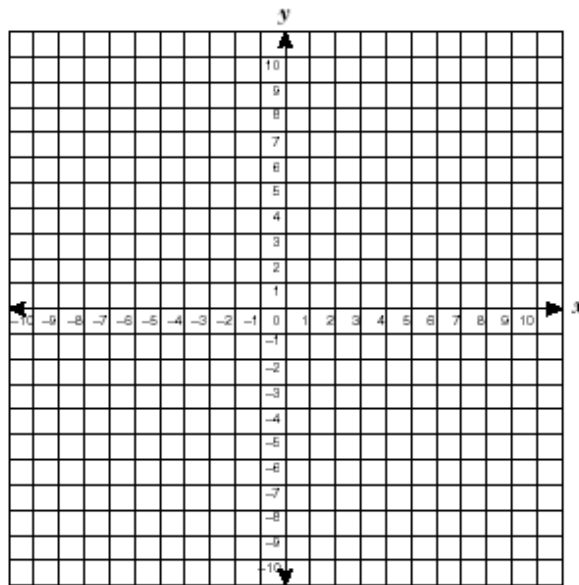
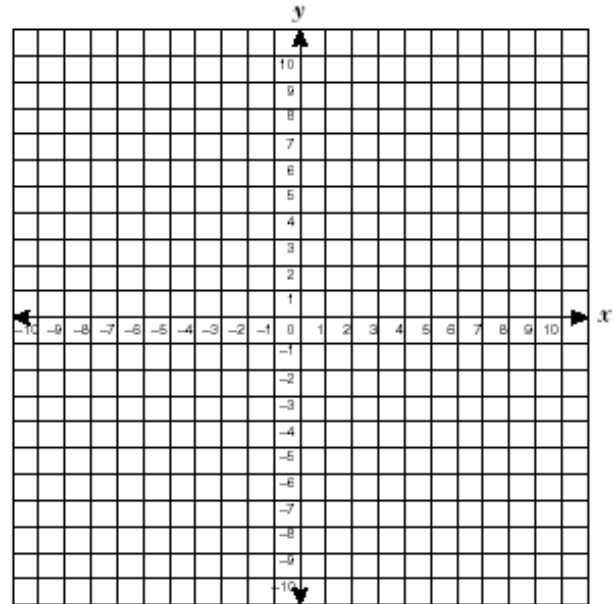
Main Ideas:

Warmup:

Suppose you have a piece of licorice 10cm long.

- a) How many different ways could you cut it into two pieces?
- b) In words, how are the lengths of the two pieces related?
- c) If x = the length of the first piece, and y = the length of the second piece, write an equation for the relation.
- d) How is your equation different from the equations we worked with in 4.2?
- e) Make a table of values.
- f) Graph the equation.
- g) Is the relation linear?

Piece #1 (x)	Piece #2 (y)



Ex1

For the equation

$$3x - 2y = 6:$$

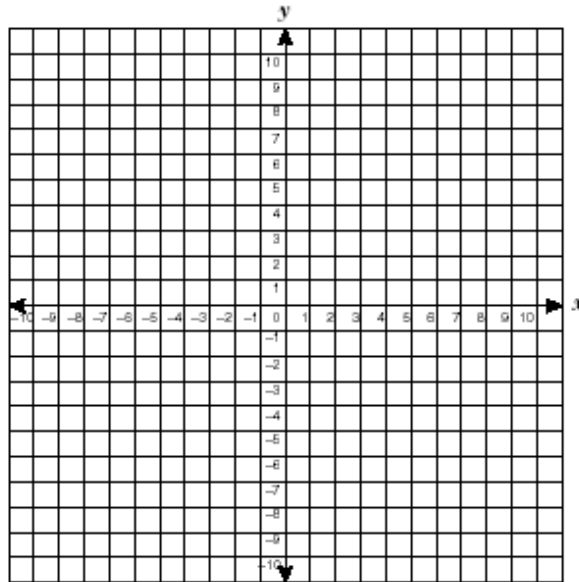
- a) Make a table of values for $x = -4, 0, 4$
- b) Graph the equation.
- c) What is another name for a 'slanted' line?

Sometimes, only one variable appears in an equation, for example, $x = 2$, or, $y = -5$

Ex2

Graph $x = 2$

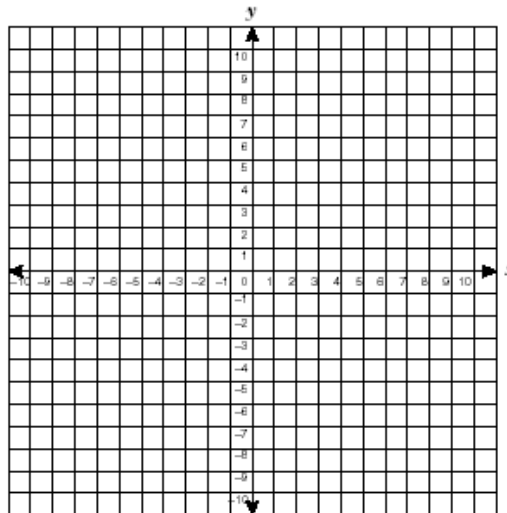
Hint: The only requirement for a point on the graph is that the x value must be 2. So y can be anything, as long as x is 2.



What kind of line is produced?

Ex3

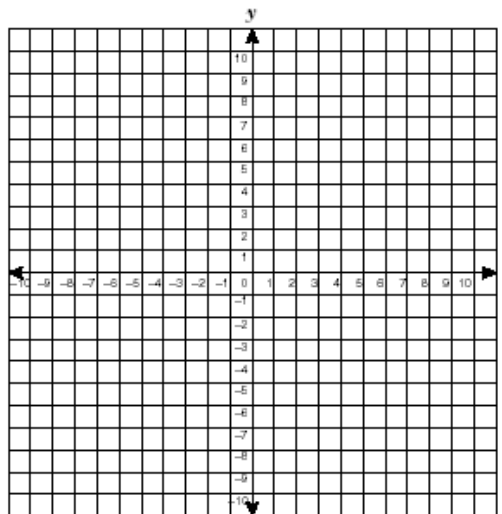
Graph $x = -1$



Ex4

Graph $y = -5$

The only requirement is that for each point, the y value must be -5 .



What kind of line is produced?

What kind of equation

Produces a:

a) oblique line?

b) vertical line?

c) horizontal line?

Reflection: Give an example of an equation that produces a: (i) horizontal line
(ii) oblique line (iii) vertical line