

Math 9 Notes

When equations are written in the form $y = ?x + ?$, there are some patterns which exist:

- If the # in front of x is negative, the graph will slant upwards to the left.
- If the # in front of x is positive, the graph will slant upwards to the right.
- For $y = 2x + 1$, the graph will pass through +1 on the y -axis. The 2 tells us that to make a new point, we move up 2 units and then 1 unit to the right.
- For $y = -4x - 3$, the graph will pass through -3 on the y -axis. The -4 tells us that to make a new point, we move up 2 units and then 1 unit to the right.

Which graph is steeper $y = 2x$ or $y = 4x$?

$y = 4x$ is steeper because to graph it, we have to start at 0 and then rise 4 units for every unit we move to the right. For $y = 2x$, we have to start at 0 and then rise 2 units for every unit we move to the right.

Parallel Lines are lines which never meet. They are the same distance apart. Equations for lines that are parallel have the same # in front of x .

Example:

These lines are parallel $y = 3x$

$$Y = 3x + 1$$

$$Y = 3x - 4 \text{ because the \# in front of } x \text{ is } 3 \text{ for all equations.}$$

Patterns we have seen:

$y = 3$ is a horizontal line which passes through 3 on the y -axis. (There is only a y variable.)

$x = 4$ is a vertical line which passes through 4 on the x -axis. (There is only an x variable.)

$y = 2x + 7$ is an oblique line which passes through +7 on the y -axis. To find another point on the line, you would start at 7 and move up 2 units and to the right 1 unit. (There has to be an x and a y variable.)