

Learning Goals

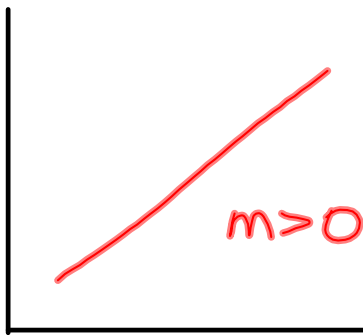
1. To be able to identify the slope and y-intercept for any equation of a line.
2. To understand that the y-intercept (b) is where the line crosses the y-axis.
3. To understand that the greater the value of the slope (m), regardless of its sign, the steeper the line.
4. To understand what the equation of a horizontal and vertical line looks like.

5.1 - Exploring the Equation of a Line

Key Ideas

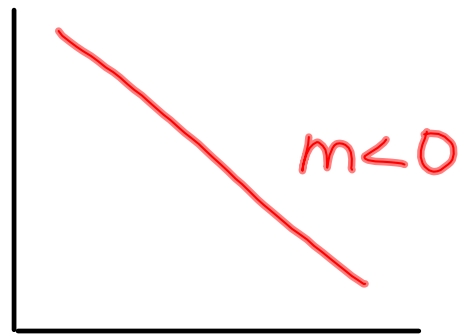
1. $y = mx + b$ is the equation of a line where m represents the slope of a line and b represents the y-intercept of the line.
2. The value of the y-intercept (b) is where the line crosses the y-axis.
3. The value of the slope (m) determines the steepness and direction of the line. The greater the magnitude of the m value, the steeper the line.

A line rising to the right has a **positive slope**.



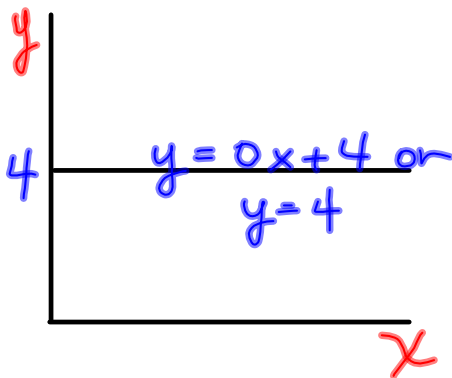
i.e. 0.5, 7.2, 3

A line **falling** to the right has a **negative slope**.

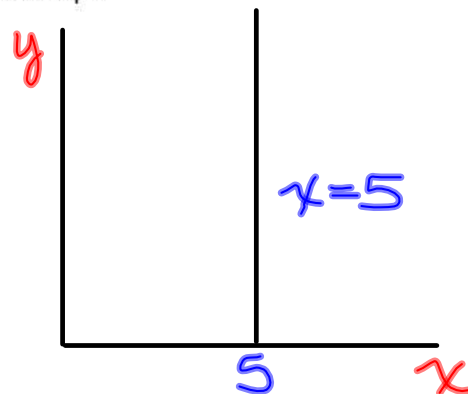


i.e. -0.5, -7.2, -3

A **horizontal line** has a **slope of 0** and its equation has the form $y = b$ is the value of the y -intercept.



A **vertical line** has an **undefined slope** and its equation has the form $x = a$, where "a" is the value of the x -intercept.



1. Look at, "The Equation of a Line - GSP Instructions" and we will work through #1 - 11 as a class.
2. Next, we will go to computer lab room 110 - 5 to complete an exercise on slope properties on the back of the instruction sheet.
3. Finally, hand in your completed handout at the end of the period.