



Vocabulary: Points, Lines, and Equations



Vocabulary

- **Coordinates** – a set of numbers that names the location of a point.
 - In the two-dimensional coordinate plane, it takes two numbers (x, y) to specify a location.
 - The (x, y) coordinates of a point are called an *ordered pair*.
- **Equation** – a mathematical sentence stating that two expressions are equal.
 - For example, $3 + 4 = 7$, $3x + 2 = -5$, and $y = 5x$ are equations.
- **Input** – a value of x that can be substituted into an equation to find the corresponding output or y -value.
 - In the equation $y = x + 1$, if the input is 3, the output is 4.
 - An input value is the first element in an ordered pair. For example, in the ordered pair, $(3, 4)$, the number 3 is the input.
- **Ordered pair** – the coordinates of a point in the form (x, y) .
 - The first number (x -coordinate) in an ordered pair tells you how far the point is right or left of the y -axis.
 - The second number (y -coordinate) in an ordered pair tells you how far the point is above or below the x -axis.
 - In the equation $y = x + 1$, if the input is 3, the output is 4. This means the point $(3, 4)$ lies on the graph of $y = x + 1$.
- **Output** – the value of y when a value of x is substituted into an equation.
 - In the equation $y = x + 1$, if the input is 3, the output is 4.
 - An output value is the second element in an ordered pair. For example, in the ordered pair, $(3, 4)$, the number 4 is the output.
- **x -intercept** – the x -coordinate of a point where a graph intersects the x -axis.
 - In general, the x -intercept is the value of x when $y = 0$.
 - For example, for $y = x + 1$, the x -intercept is found by substituting 0 for y :
 $0 = x + 1 \rightarrow x = -1$.
- **y -intercept** – the y -coordinate of a point where a graph intersects the y -axis.
 - In general, the y -intercept is the value of y when $x = 0$.
 - For example, for $y = x + 1$, the y -intercept is found by substituting 0 for x :
 $y = 0 + 1 \rightarrow y = 1$.

