

GRAPHING BASICS

1. THE REQUIREMENTS FOR PROPER GRAPHING:
 - a. Label the axes with x & y
 - b. Label at least two points on each line
 - c. Write the equation on each line
 - d. Make sure lines and axes are LINES
2. DEFINITION OF X AND Y INTERCEPTS:
 - a. The x-intercept is the point where the line crosses the x-axis
 - i. The value of y is always 0
 - ii. To find: make $y = 0$ in the equation and solve for x.
 - b. The y-intercept is the point where the line crosses the y-axis
 - i. The value of x is always 0
 - ii. To find: make $x = 0$ in the equation and solve for y.
3. SLOPE
 - a. Definition
 - b. The steepness of a line
 - c. Types of slope
 - i. Direction:
 1. Positive—goes up from left to right
 2. Negative—goes down from left to right
 3. 0—0 is in the numerator—horizontal line
 4. Undefined—0 in the denominator—vertical line
 - ii. Steepness:
 1. Absolute value of coefficient of x < 1 --Shallow
 2. Absolute value of coefficient of x > 1 -- Steep
 - d. What do you need to calculate slope?
 - i. Two DIFFERENT points
 - e. Ways to represent slope
 - i. $m, \frac{\text{rise}}{\text{run}}, \frac{\Delta y}{\Delta x}, \frac{y_2 - y_1}{x_2 - x_1}$
 - f. Should be represented as an improper fraction
4. VERTICAL LINES:
 - a. Undefined slope
 - b. $x = \text{any number}$
5. HORIZONTAL LINES:
 - a. 0 slope
 - b. $y = \text{any number}$
6. DOMAIN AND RANGE:
 - a. Definition of Domain: all x-values also is the Independent Variable
 - b. Definition of Range: all y-values also is the Dependent Variable
7. FUNCTION
 - a. Definition: Each x-value has a unique y-value
 - b. Vertical Line Test: No two points are on the same vertical line