Key Characteristics of Graphs: Graphs Review (Notes 01) – Graph Review

- Coordinate Plane – A two-dimensional number line where the vertical line is called the y-axis and the horizontal is called the x-axis.

  o These lines are perpendicular and intersect at their zero points (the origin).
  o The axes divide the plane into four quadrants.

- Quadrants - The axes of a coordinate plane are divided into four infinite regions.

  o They are numbered from 1st to 4th and denoted by Roman numerals: I, II, III, & IV

  o The signs of the (x,y) coordinates are:
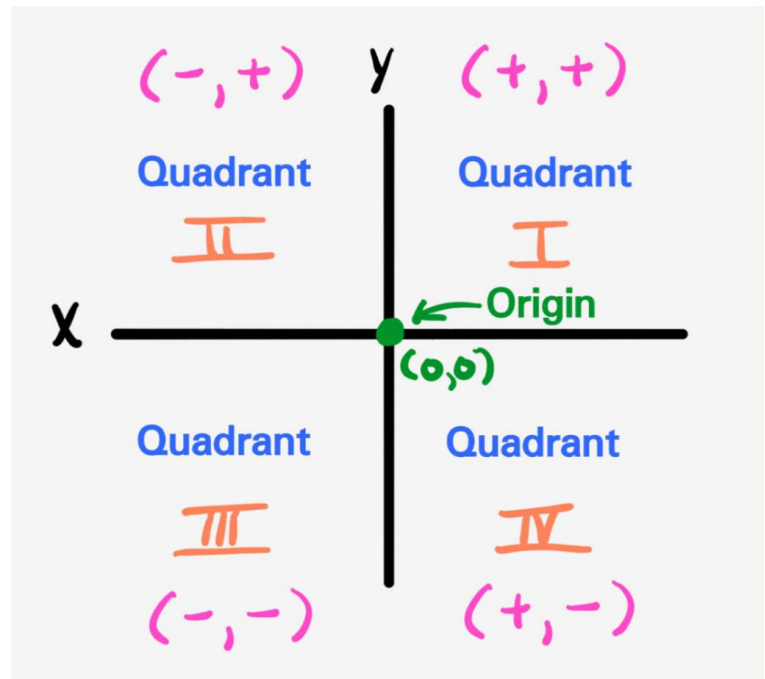
Quadrant I: (+,+)	Quadrant II: (−,+)	Quadrant III: (−,−)	Quadrant IV: (+,−)
Top Right	*Top Left*	*Bottom Left*	*Bottom Right*

- Graph - A diagram showing the relation between variable quantities.

  o A graph is drawn onto a coordinate plane with an x- and y- axis.
  o The axes are NOT part of the graph itself. They are part of the coordinate plane that a graph is drawn onto.

    ▪ x-axis: input values / independent quantities (horizontal axis: Left to Right)
    ▪ y-axis: output values / dependent quantities (vertical axis: Bottom to Top)

- Coordinate – Location marked on a graph using a point (x, y).

  o To locate x & y, start at the origin (0, 0) and move along the x-axis horizontally, then identify the y-value vertically.

    ▪ x comes 1st alphabetically. It is graphed first, using the numbers on the x-axis.
    ▪ y comes 2nd alphabetically. It is graphed second, using the numbers on the y-axis.

- **Extrema (Maxima & Minima)**

  o **Absolute Maximum** - A point with a y coordinate greater than the y-coordinates of every other point on the graph.

  o **Absolute Minimum** - A point with a y-coordinate less than the y-coordinates of every other point on the graph.

  o **Relative Maximum** - The highest point in a particular section of a graph.

  o **Relative Minimum** - The lowest point in a particular section of a graph.
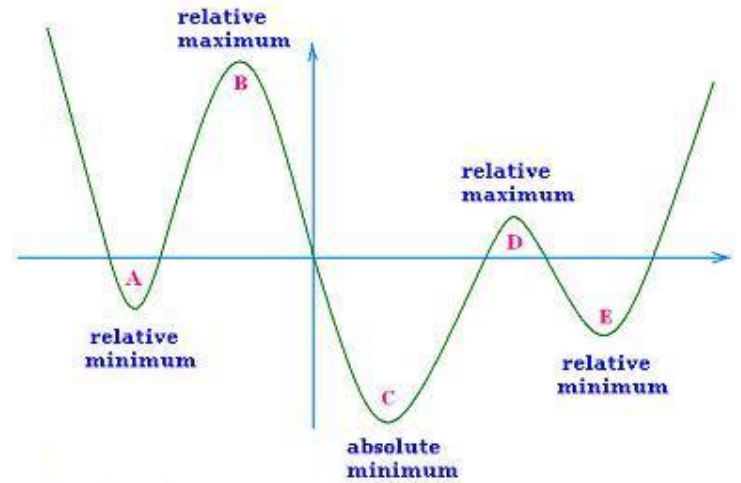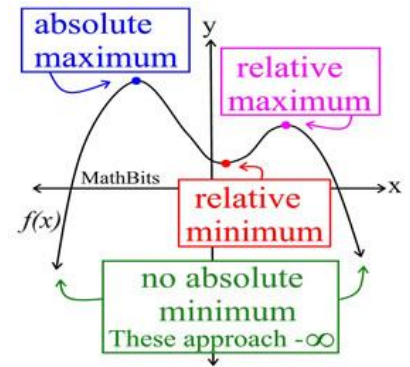
- **Numerical Data**

  o **Continuous** – Measured data.
    - A graph of points that are connected by a line or smooth curve. They have no breaks.
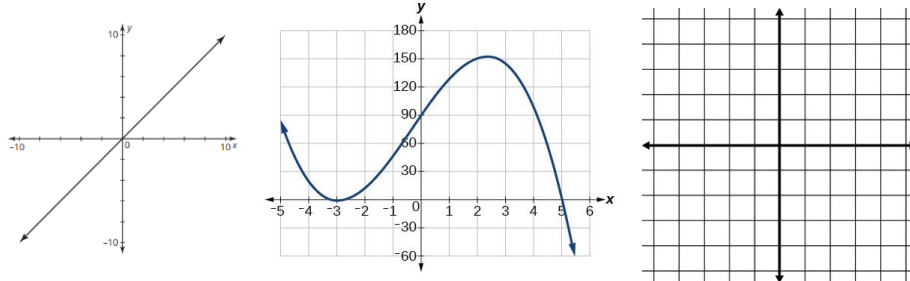
  o **Discrete** – Counted data.
    - A graph of isolated points.