Vocabulary: Linear Functions

📖 **Vocabulary**

- <u>Coordinates</u> – 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*.

- <u>Equation</u> – a mathematical statement that states that two expressions involving numbers and/or variables are equal.

  - For example, $3 + 4 = 7$, $3x + 2 = -5$, and $y = 5x$ are equations.

- <u>Function</u> – a set of ordered pairs such that for each input (x) value, there is one and only one output (y) value.

- <u>Input</u> – a number that goes into a relation; an x-value.

  - 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.

  - In the equation $y = x + 1$, if the input is 3, the output is 4.

- <u>Linear function</u> – a function whose graph is a non-vertical straight line.

- <u>Mapping diagram</u> – a diagram that contains two columns consisting of input and output values that can be paired to form a relation.

  - Pairs of values can be plotted as points in the x, y-coordinate plane.

  - This mapping diagram shows 4 mapped onto 3, 6 mapped onto 7, and 8 mapped onto 4. The mapping represents the ordered pairs (4, 3) (6, 7), and (8, 4).

- <u>Ordered pair</u> – the coordinates of a point in which the first coordinate represents its x-value and the second coordinate represents its y-value.

  - For example, (3, 4) is an ordered pair where $x = 3$, and $y = 4$.

  - In the ordered pair (3, 4), 3 is the input, and 4 is the output.

- <u>Output</u> – a number that results from a relation; a y-value.

  - 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.

  - In the equation $y = x + 1$, if the input is 3, the output is 4.

- <u>Relation</u> – a set of ordered pairs.