Linear vs. Nonlinear Equations

Functions can be classified as either **linear** or **nonlinear**.

In a **linear** function, the output values have a difference which is constant. That constant difference is equivalent to the slope of the line.

In a **nonlinear** function, the output values do not have a constant difference.

Example 1

x	1	2	3	4
y	2	4	6	8

The table above represents a linear function. Every *y*-value, or output value, is two more than the preceding value. The numbers are increasing at a constant rate of 2.

Example 2

x	1	2	3	4
y	1	4	9	16

The table above represents a nonlinear function. Every *y*-value is the square of its corresponding *x*-value. The difference in output values is not constant. This table is an example of a quadratic function.

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