Functions: Properties

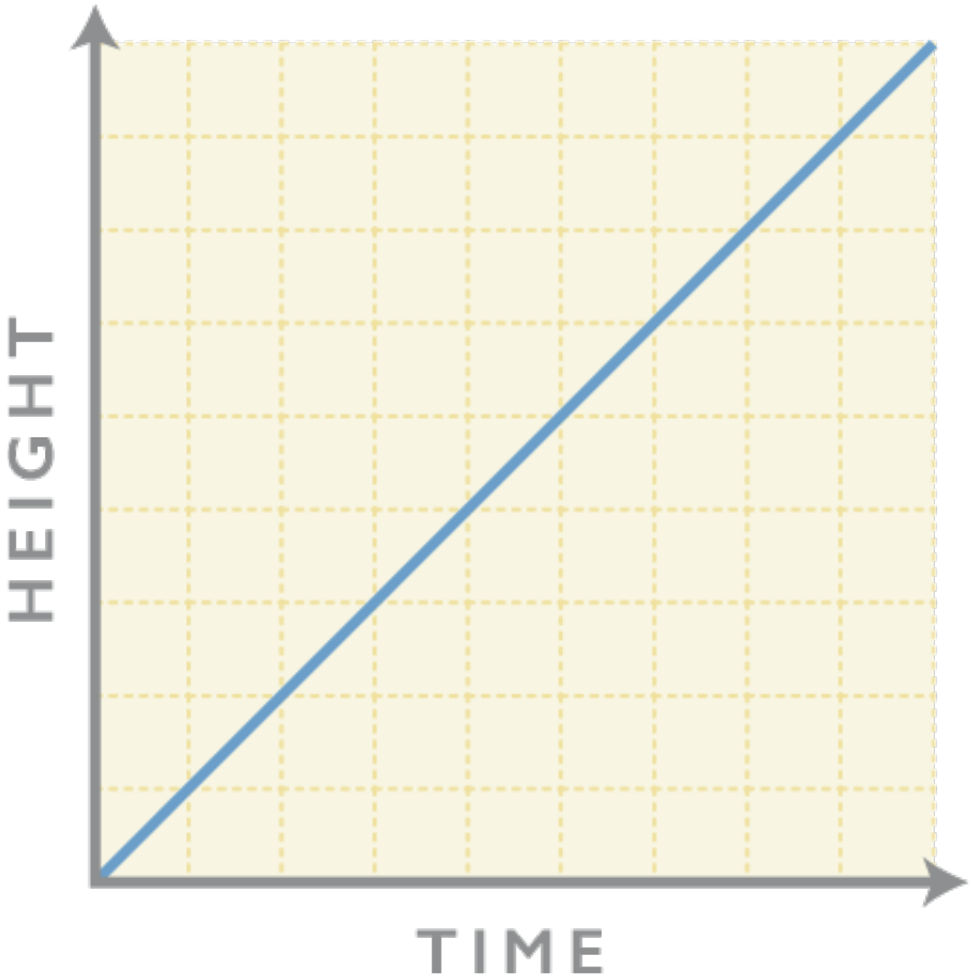
Describing a Function

A function describes the co-variation of two quantities. One quantity is the input variable, and the second quantity is the output variable.

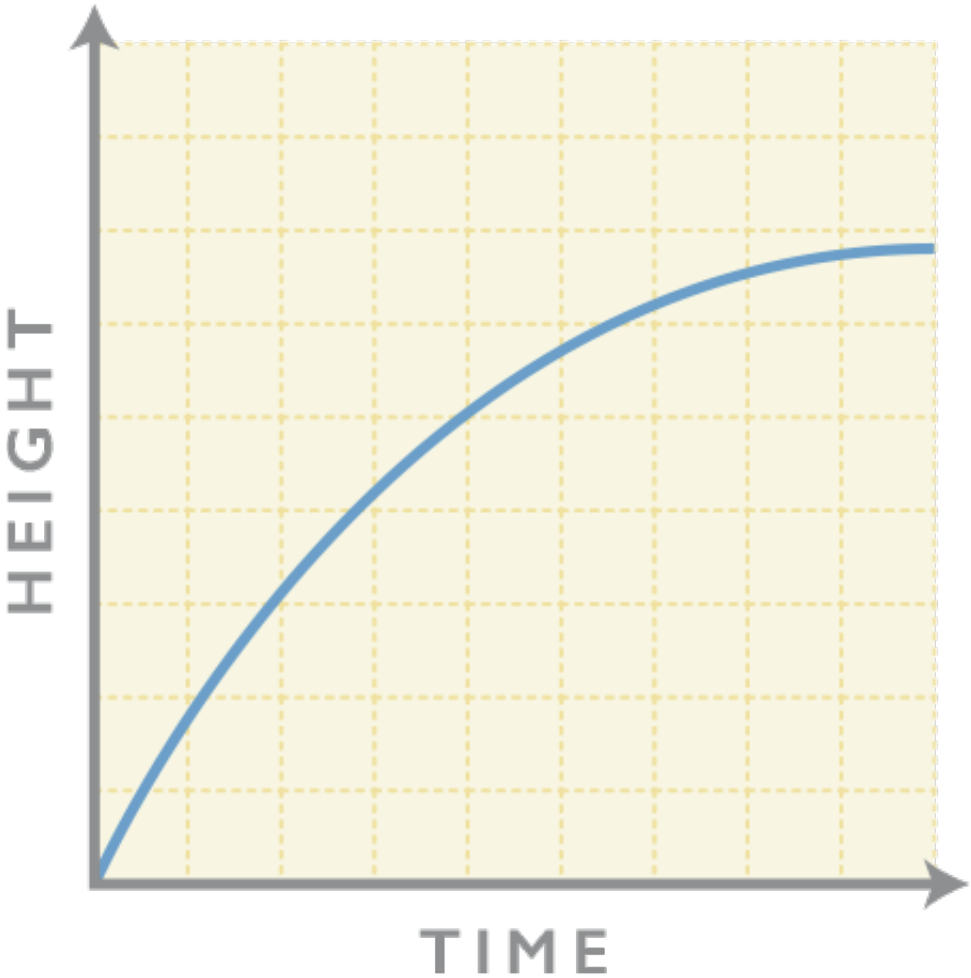
You can describe functions in many ways. In mathematics, you usually describe functions in an equation, in a graph, or in a table. But you can also see and describe quantities that co-vary in real-life situations—in videos or in written descriptions.

In this video, you see water being poured into a glass container. You can describe this mathematically as a function with the input variable being the time and the output variable being the height of the water in the glass. As you continue to pour the water, the time increases. The height of the water also increases.

The graph of this situation could look like this if you poured at a constant rate:

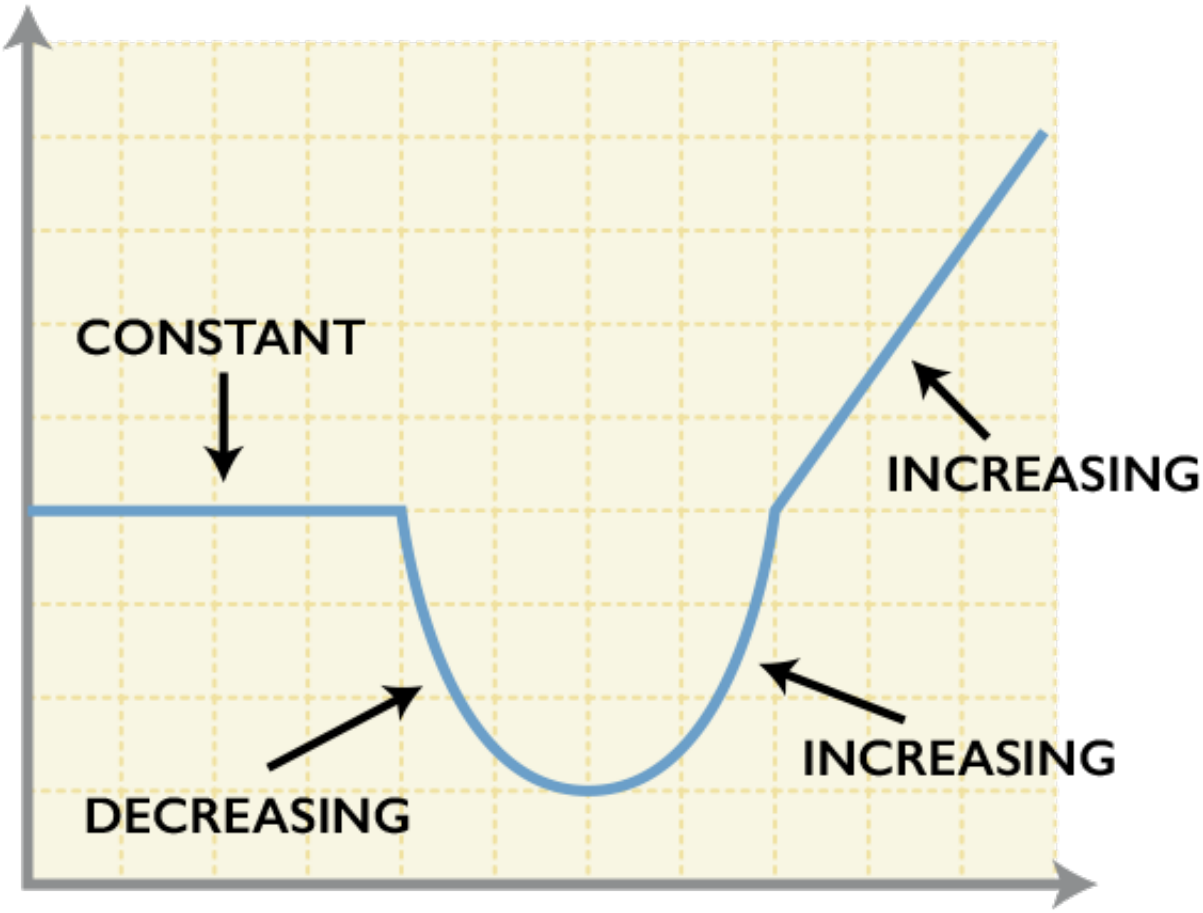


Or, it could like this if you poured faster and then slowed down as the water level reached the top of the glass.

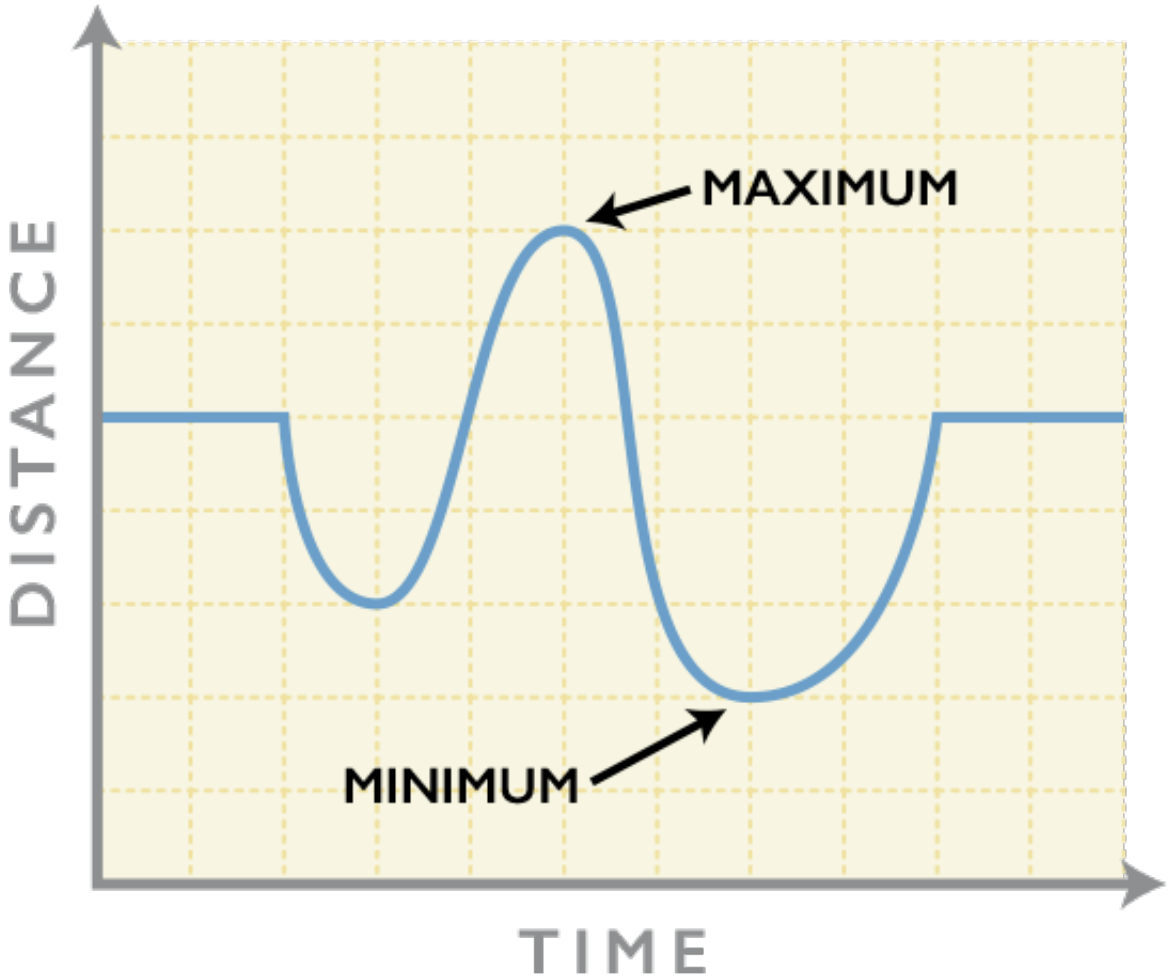
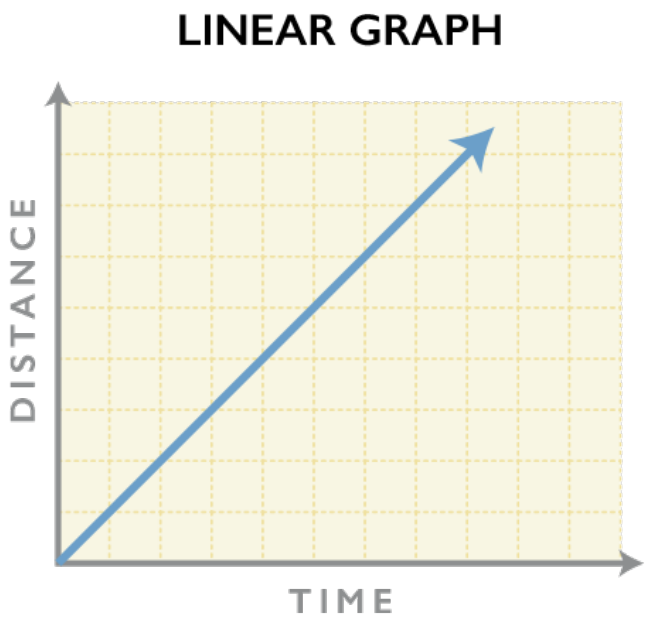
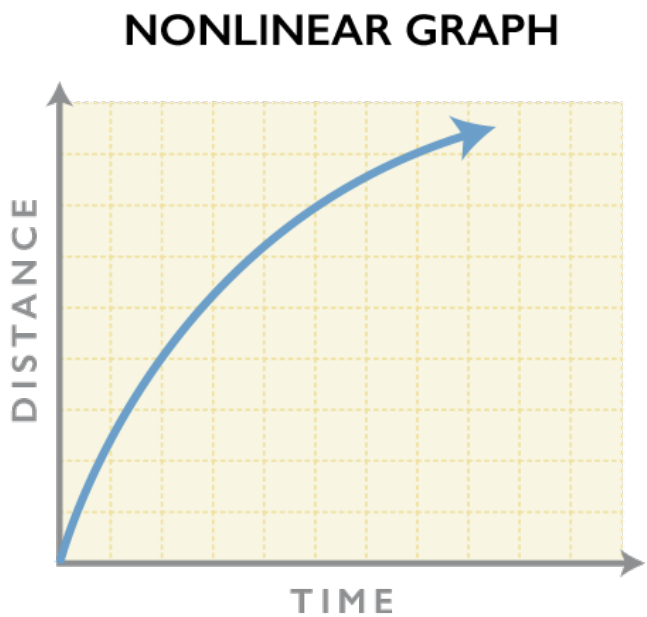


Words to Describe Functions

You can describe functions as increasing, decreasing, or constant over an interval.



Functions can have a *maximum* or a *minimum* point.



Functions can be linear (has a straight line graph) or nonlinear (has a curved graph).