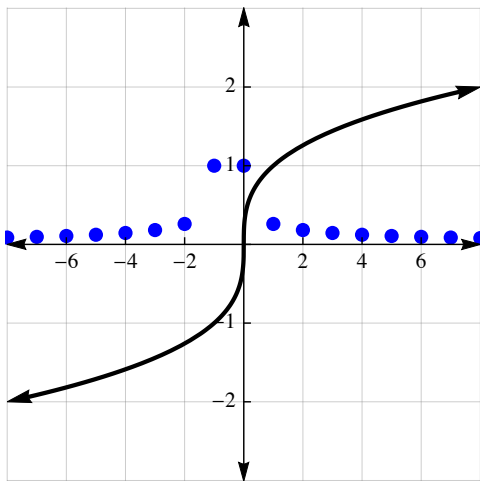


Slope Statements

A slope statement describes how the slope of a graph changes the x values increase (from the right of the graph). A slope statement has three important characteristics:

1. It reads the graph from left to right, very similar to reading a sentence in English. In other words, the slope of the graph at the right is described first, and then how the slope changes as the x values increases is described.
2. Never use the word “it”. Slope statement must be precise and the word “it” can cause ambiguity and uncertainty about what is being described.
3. The slope is described by both:
 - a. Its direction (positive or negative)
 - b. Its magnitude, such as “not very steep”, “nearly horizontal”, “almost zero” and “very steep”, “almost vertical”, “approaching infinity”.

As an example, consider the graph of $f(x) = x^{1/3}$ with its finite differences also plotted:



Here is a slope statement for this graph:

For large negative values, the slope of the graph is positive but very small (close to zero). As x increases towards zero, the slope gets larger. As x approaches zero from the left, the slope almost becomes vertical. As x increases, the slope remains positive but begins to get smaller. As x approaches infinity, the slope gets closer and closer to zero.

Notice the relationship between the slope statement and both the graph of the original function and the behaviour of the finite differences:

- When the finite differences are positive, the slope is positive
- When the finite differences are negative, the slope is negative
- When the finite differences are close to zero, the slope is close to zero
- When the magnitude of the finite differences are large, the slope is steep.