**MIT 18.01 Single Variable Calculus, Fall 2007**

This paper is not written by Massachusetts Institute of Technology (as they couldn’t write such sh🌼t). This is simply a short summary of lectures made by me for me.

**Lecture 1. What Is a Derivative**

In school in math classes we faced the function term. Function is a way of converting some value *x* to *y.* Speaking about function description we can characterize *limits* of our function etc. But we can also describe some “*speed*” (this word wasn’t used in lecture, but I heard it in DeepLearningAI course) of function changing at each point. This is a derivative.

Let’s graph some function, and draw a tangent line of some point with coordinates (X0, Y0)

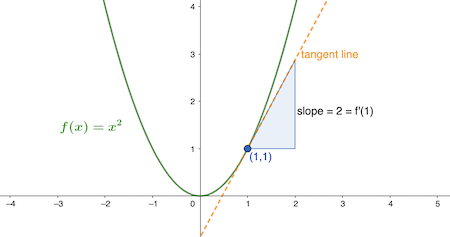


Image stolen from the web (Drawing 1.1)

Now this orange tangent line displays how our function grows.

Derivative can be written in many ways, but here I’ll use Leibniz notation

*dy/dx*

It’s also known as “rise over run”