Welcome to 18.01

Welcome to 18.01. Today we start "Unit One"; the topic of the unit is differentiation. We'll start by reviewing what's in store in the next couple of weeks.

The topic of this lecture is "what is a derivative?" We're going to look at this question from several different points of view, and the first one is the geometric interpretation. We'll also discuss a physical interpretation.

Later we'll learn what makes calculus so fundamental in science and engineering. Derivatives are important in all measurements – in science, in engineering, in economics, in political science, in polling, in lots of commercial applications, in just about everything.

In this unit we'll also learn how to differentiate any function you know. That's a tall order, but by the end of the unit you will know how to take derivatives of functions like $f(x) = e^{x \cdot \arctan(x)}$.

Let's begin.

18.01SC Single Variable Calculus
Fall 2010