

- **Exponential functions** Definition and explanation of exponential and logarithmic functions, and their derivatives

Main Part of class

First we will spend some time reviewing the idea of exponents and exponential functions.

In this course, we started with polynomial functions, and looked at the calculus of these functions - finding the derivatives, equations for tangents, how to sketch the curves.

We can do the same kind of things for lots of other functions.

Before we begin looking at the exponential function we will have another look at some of the properties of sin and cosine.

Most of this lecture will be about the exponential function.

The exponential function is important in measuring growth; it's inverse is the logarithmic function, which is also an important function.

An exponential function is of the form

$$f(x)=a^x$$

for example,

$$f(x)=3^x$$

There is a special number, e , such that the derivative of e^x is also e^x . We use this to show how to find the derivative of other exponential functions.