# Derivative

## L'Hopital's rule

## Taylor's theorem

For any given function f(x), it could be expanded as:

We already know that



So, when X gets close enough to 0, it could be written as:

called reminder here, it refers to those variables that have power larger than 1. would be very small but do not equal to 0, so even

And so on, we could get that

So, when X gets close enough to 0, we could get that: