DEs and variables

Definition:

A **differential equation** is an equation that relates one or more functions and their derivatives.

Recall that a **function** is a rule which takes an input and assigns to it an output.

Definition:

- A symbol that represents an input of a function is called an **independent variable**.
- A symbol that represents an output of a function is called an **dependent variable**.

Probably the most common symbol to represent a function is f, while the most common symbol for an input is x, and an output is y. We know this as $f(x) = y$.

However, in this class will will also study functions which have *more than one* input.

Definition:

A **multivariable** function is a function which consists of more than one independent variable.

Discussion, comments, and examples:

WeBWorK module 01 exercises:

- Problems 1,2.

Relevant Wikipedia articles:

- **Differential equations**
- **Dependent and independent variables**
- **Multivariable functions**