Inverse Functions

We shall examine more closely the relationship between two variables through a functional relationship, i.e. \( y = f(x) \) from both directions, i.e. \( x = g(y) \) and classify the functions \( f \) and \( g \) as inverses of each other. Of particular interest will be the relationship between the domain and range of a function and its inverse function. We will also be interested in tests and techniques for determining when an inverse function exists and how to compute it explicitly when it does.

**Homework 4:** *Anton, Bivens & Davis* §1.5: 1, 5, 7, 8, 10, 10, 11, 18, 21, 24, 25

Class 6: *Wednesday, September 12*
Reading: *Anton, Bivens & Davis* Section 1.6

Exponentials and Logarithms

A particular important example of a function-inverse pair is the natural exponential function \( e^x \) and the natural logarithm function \( \ln(x) \). We will also review the rules of exponents and logarithms.

**Homework 5:** *Anton, Bivens & Davis* §1.6: 1, 2, 5, 6, 13, 16, 25, 29, 43, 49

Lab 2: *Thursday, September 13*

Homework 3, 4 & 5 Due in the Math 110 Course Box by 5:00 pm Thursday September 13

Class 6: *Friday, September 14*
Reading: *Anton, Bivens & Davis* Section 1.7

Mathematical Models

We will begin our discussion of the application of mathematics to describe all sorts of natural and scientific phenomena, known as mathematical modelling.

**Homework 6:** *Anton, Bivens & Davis* Chapter 1 Review: 1, 6, 11, 15, 27, 33, 40

Quiz 2 *Take Home Quiz Due Monday September 17*