## Introduction

In this lesson, you will first learn the most important mathematical principles that are necessary for further understanding the script. We will provide some basic terms and definitions that you will come across again and again during your work. Some of them will probably look familiar to you from school, but there will certainly be some new aspects to them. Try to internalize the presented terms and, if possible, learn them by heart. This will make further reading of this script much easier.

After introducing the basic concepts, we will go into techniques that can be used to show the correctness of mathematical statements. An essential part of mathematics is to prove the assertions made. We will provide the necessary tools for this later in this unit. The methods presented there will be applied in many ways throughout this script.

Finally, we discuss different ways to represent finite sums. Sums play an important role in both mathematics and computer science and are used in various places. In addition, we discuss some important rules for the transformation and calculation of sums.