Institut for Matematik og Datalogi
Odense Universitet

February 4, 2000
JFB

DM11 – F00 – Lecture 2

Announcement

The lectures will be held in U45 (not in U49d), at the scheduled time, Tuesdays from 10:15 to 12:00.

Lecture, February 1

We began with an introduction to the course. Then, we covered sections 1.1 through 1.5 in the textbook. Section 1.8 will not be covered in this course since it is covered in DM02.

Lecture, February 8

We will finish sections 1.6 and 1.7 of chapter 1 and cover section 3.1.

Lecture, February 15

We will cover sections 3.2 through 3.3 of chapter 3, and section 2.3 of chapter 2. In chapter 3, we will skip sections 3.4 and 3.5, since they are covered in other courses. Lamé's Theorem will be covered in connection with chapter 2, instead of chapter 3. The section of the notes, entitled "Structural Induction", will be covered in connection with chapter 3.

Problems to be discussed in week 7

- The following could be a property of a set S of integers. Write down the formal negation of this property: $\forall x \in S,\ x \geq k\ :\ \exists y \in S\ :\ x^3 = y$.
- The problems with parentheses will only be discussed if there is time.
- From the 3rd edition:

  10.e, and 26 from section 1.5. (Note the definition before problem 22.)

  10, 22, 23, (37) from section 1.6.

(12), 13, 19, 20d, (21), 24, 25, (27), (28), and (30) from section 1.7. For problem 28, is it necessary to assume that not all of a, b, and c are equal to zero? Why?

Show that $\mathbb{Q}$ is countable. (Hint: see problem 25 from section 1.7.)

- From the 4th edition:

  10.e, and 26 from section 1.5. (Note the definition before problem 22.)

  12, 26, 27, (57) from section 1.6.

  (20), 21, 31, 32d, 33, 36, 37, (39), (40), and (42) from section 1.7. For problem 28, is it necessary to assume that not all of a, b, and c are equal to zero? Why?

  Show that $\mathbb{Q}$ is countable. (Hint: see problem 37 from section 1.7.)