

MM524 / DM527: Weekly Notes 2010 (Week 39)

Lectures in week 39

Tuesday 28/09

- Rest of Chapter 2
- Section 3.4 : The Integers and Division
- Section 3.5 : Primes and Greatest Common Division
- Section 3.6 : Integers and Algorithms

Thursday 30/09

- Section 3.6 : Integers and Algorithms
- Section 3.7 : Applications of Number Theory
- Section 3.8 : Matrices

Exercises for discussion sections

S7: Wednesday 29.09. M1: Wednesday 29.09. S1: Thursday 30.09.

1. Section 2.4

31, 36, 37, 42

2. Section 3.4

4, 8, 11, 12, 13, 17a, 17b, 19a, 19c, 23, 24

3. Exam 2007

<http://www.imada.sdu.dk/~lenem/Teaching/DM527/Eksamen/eksamenDM527nov07.pdf>

Solve Exercise 1

4. Fallacy:

Theorem: For any sets A , B , and C , if $A \cup B = A \cup C$, then $B = C$

Proof: Assume that $A \cup B = A \cup C$. We need to prove $B=C$. First we will prove that $B \subseteq C$. Suppose x is in B . Then x is certainly in $A \cup B$. By assumption, therefore x is also in $A \cup C$. But we did not assume x was in A , so x must be in C . Thus, we have shown that $B \subseteq C$. By parallel argument, $C \subseteq B$.

What went wrong?

S7: Friday 01.10. M1: Friday 01.10. S1: Monday 04.10.

1. Section 3.5

Exercise 3b, 11, 12a, 12b, 17, 21a, 23a

2. Section 3.6

Exercise 20, 23b

3. Exam 2008

<http://www.imada.sdu.dk/~lenem/Teaching/DM527/Eksamen/reksamendm527jan08.pdf>

Solve Exercise 1a, 1c, 1d

4. Exam 2004

<http://www.imada.sdu.dk/~lenem/Teaching/DM527/Eksamen/eksamenDM72-504.pdf>

Solve Exercise 2004.13.1 Opgave 1a