MAD 3512 - THEORY OF ALGORITHMS FLORIDA INT'L UNIV.

HOMEWORK SHEET SEVENTH EDITION

TEXTBOOK: An Introduction to Formal Languages and Automata

by Peter Linz, 7th Edition (D.C. Heath & Co., 2022)

The HW problems for the 7th edition. They are identical to those the 6th edition.

Review of Discrete Math: There is no time for this section to be covered in class

Sec. 1.1 Nos. 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 24,

31, 36, 37, 38, 39, 40, 41, 42, 43.

(Self revision. If you have trouble with these problems review your Discrete Math.)

FOR ANSWERS: See Prof. Ram's webpage <http://faculty.fiu.edu/~ramsamuj/>

Ch. 1 - Formal Languages and Regular Expressions:

Sec. 1.2 Nos. 1, 2, 3, 4, 5, 7, 8, 9, 10, 11.

Sec. 3.1 Nos. 1, 2, 5, 6, 7, 8, 9a-d, 10, 11, 12, 13, 14, 15, 19a-c, 20a-c, 21a-c, 22a-d.

Suppl. Prob. # E1, E2, E3, E4, E5 (available from Prof. Ram’s webpage).

Ch. 2 - Context-Free & Right Linear Grammars:

Sec. 1.2 Nos. 12, 13, 14a-d, 15, 16, 17a-h, 18a-d, 19, 20, 18a-c, 22, 23, 24.

Sec. 3.3 Nos. 3, 4, 5a-b, 6, 7, 11, 12.

Sec. 5.1 Nos. 3, 9a-d, 12a-d, 16a-b, 23, 24, 25, 26, 27.

Sec. 5.2 Nos. 2, 3, 4, 7, 8, 13, 15, 17

Ch. 3 - Finite Automata (Deterministic and Non-Deterministic):

Sec. 2.1 Nos. 1, 4a-d, 7a-d, 9, 10, 11a-c, 12, 13, 14, 15

Sec. 2.2 Nos. 3, 4, 5, 6, 8, 9, 12, 13, 15, 17

Sec. 2.3 Nos. 1, 3, 7, 8, 9a-b, 12, 13a-b

Sec. 2.4 Nos. 2, 4, 6

Ch. 4 - Regular and Non-regular Languages :

Sec. 3.2 Nos. 3, 4a-b, 5, 6, 7a, 9, 10a-b, 11, 12, 15a, 18a-b

Sec. 3.3 Nos. 1, 3, 4, 5, 6, 7 11, 12, 13, 14

Sec. 4.1 Nos. 9, 10, 11, 16, 17, 18, 20, 27

Sec. 4.2 Nos. 2, 3, 5, 7

Sec. 4.3 Nos. 4 a-b, 5 a-f, 6 a-d, 17, 18, 24, 26, 27

Suppl. Prob. Nos. E6, E7, E8, E9, E10, E11 (from Prof. Ram’s webpage)

Ch. 5 - Turing Machines, Turing-Computable Functions & Turing-Decidable relations:

Sec. 9.1 Nos. 3, 4, 5, 6, 7, 8a,b,g, 10, 13

Sec. 11.1 Nos. 2, 5, 6, 7, 8

Ch. 6 - Recursive Functions, Recursive & Semi-recursive relations, Comp. Complexity

Sec. 13.1 Nos. 1a-b, 4, 5a-b, 7a-b, 8, 10, 12a-c, 13a-b, 14, 18a-d

Suppl. Prob. Nos. E12, E13, E14 (available from Prof. Ram’s webpage)

Sec. 14.1 Nos. 1, 2, 3 (End of 7th ed. HW)

MAD 3512 - THEORY OF ALGORITHMS FLORIDA INT'L UNIV.

HOMEWORK SHEET SIXTH EDITION

TEXTBOOK: An Introduction to Formal Languages and Automata

by Peter Linz, 6th Edition (D.C. Heath & Co., 2017)

Review of Discrete Math: There is no time for this section to be covered in class

Sec. 1.1 Nos. 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 24,

31, 36, 37, 38, 39, 40, 41, 42, 43.

(Self revision. If you have trouble with these problems review your Discrete Math.)

FOR ANSWERS: See Prof. Ram's webpage <http://faculty.fiu.edu/~ramsamuj/>

Ch. 1 - Formal Languages and Regular Expressions:

Sec. 1.2 Nos. 1, 2, 3, 4, 5, 7, 8, 9, 10, 11.

Sec. 3.1 Nos. 1, 2, 5, 6, 7, 8, 9a-d, 10, 11, 12, 13, 14, 15, 19a-c, 20a-c, 21a-c, 22a-d.

Suppl. Prob. # E1, E2, E3, E4, E5 (available from Prof. Ram’s webpage).

Ch. 2 - Context-Free & Right Linear Grammars:

Sec. 1.2 Nos. 12, 13, 14a-d, 15, 16, 17a-h, 18a-d, 19, 20, 18a-c, 22, 23, 24.

Sec. 3.3 Nos. 3, 4, 5a-b, 6, 7, 11, 12.

Sec. 5.1 Nos. 3, 9a-d, 12a-d, 16a-b, 23, 24, 25, 26, 27.

Sec. 5.2 Nos. 2, 3, 4, 7, 8, 13, 15, 17

Ch. 3 - Finite Automata (Deterministic and Non-Deterministic):

Sec. 2.1 Nos. 1, 4a-d, 7a-d, 9, 10, 11a-c, 12, 13, 14, 15

Sec. 2.2 Nos. 3, 4, 5, 6, 8, 9, 12, 13, 15, 17

Sec. 2.3 Nos. 1, 3, 7, 8, 9a-b, 12, 13a-b

Sec. 2.4 Nos. 2, 4, 6

Ch. 4 - Regular and Non-regular Languages :

Sec. 3.2 Nos. 3, 4a-b, 5, 6, 7a, 9, 10a-b, 11, 12, 15a, 18a-b

Sec. 3.3 Nos. 1, 3, 4, 5, 6, 7 11, 12, 13, 14

Sec. 4.1 Nos. 9, 10, 11, 16, 17, 18, 20, 27

Sec. 4.2 Nos. 2, 3, 5, 7

Sec. 4.3 Nos. 4 a-b, 5 a-f, 6 a-d, 17, 18, 24, 26, 27

Suppl. Prob. Nos. E6, E7, E8, E9, E10, E11 (from Prof. Ram’s webpage)

Ch. 5 - Turing Machines, Turing-Computable Functions & Turing-Decidable relations:

Sec. 9.1 Nos. 3, 4, 5, 6, 7, 8a,b,g, 10, 13

Sec. 11.1 Nos. 2, 5, 6, 7, 8

Ch. 6 - Recursive Functions, Recursive & Semi-recursive relations, Comp. Complexity

Sec. 13.1 Nos. 1a-b, 4, 5a-b, 7a-b, 8, 10, 12a-c, 13a-b, 14, 18a-d

Suppl. Prob. Nos. E12, E13, E14 (available from Prof. Ram’s webpage)

Sec. 14.1 Nos. 1, 2, 3 (End of 6th ed. HW)