Final Homework Problems
CS 24, Spring 2026
Rosen, Eighth Edition

About the required reading

focus only on those sections of the text which pertain to
    the definitions or assigned problems
work backwards as follows:
    for each definition, read enough of the text to understand the definition
    for each homework problem, read enough of the text to do that problem

Complexity

Section 3.2 big-O
    big-O
    2, 4, 8ab, 10, 14, 20-26 (even)
Section 3.3
    problem specification, algorithm description, algorithm analysis
    worst-case time complexity function, worst-case polynomial time complexity
    tractable, P, NP, NP-hard, NP-complete

Problem/Algorithm/Analysis
    TSP
    TSP-decision

Recursive Functions

Section 8.1
    2,3,6,8,19,30
Section 8.2
    linear, homogeneous recurrence relation of degree k with constant coefficients
    2,4,5,8
Section 8.3
    8,10,11,14,15,16

Problem/Algorithm/Analysis
    Towers of Hanoi

Relations

Section 9.1
    relation, relation on a set, reflexive, symmetric, transitive
    2,4,6
Section 9.3
    2,4,6,8,19,21,24,26,32
Section 9.5
    equivalence relation, equivalent, equivalence class
    2,8,14, 22,24,27,36,38

Graph Theory

Section 10.1

simple undirected graph (from class)

Section 10.2

adjacent, degree, degree sequence

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Section 10.3

adjacency matrix, graph isomorphism

1,2,5,6,29,38-48, 63

Problem/Algorithm/Analysis

Graph Isomorphism