

PART 4:

Complexity Theory:

Complexity
Time Complexity Classes
Space Complexity Classes

Analysis of Complexity

Readings

Chapter 27:

Sections

27.1

27.2

27.3

27.4

27.5

27.6

27.7

Exercises

Chapter 27:

1

6

7

Time Complexity Classes:

P, NP, NP-completeness

Readings

Chapter 28:

Sections

28.1

28.2

28.3

28.4

28.5

28.6

28.9

Exercises

Chapter 28:

1

2

3 - b

8 – a

15

The Cook-Levin Theorem?

$3\text{-SAT} \leq_p \text{INDEPENDENT-SET}$

$3\text{-SAT} \leq_p \text{VERTEX-COVER}$

Space Complexity Classes

Readings

Chapter 29:

Sections

29.1

29.2

29.3

29.6

Exercises

Chapter 29:

2 – a

The Savitch's Theorem?

HW #4

- **Chapter 27:** Exercise #1, #6 and #7.
- **Chapter 28:** Exercise #1, #2, #3-(a), #8-(b), #10-(a) and #15.
- **Chapter 29:** Exercise #2-(b).