

## Homework 5

*Instructor: Colleen Robichaux**Due by 11/16 at 5PM through GradeScope*

**Exercises** (from textbook and additional exercises (A.E.) below):

- 8.4 - 2, 3
- 8.5 - 2, 20
- 8.6 - 2, 3, 9, 11, 12, A.E. 1
- Degree sequences: - A.E. 2

ADDITIONAL EXERCISE 1. Draw two non-isomorphic graphs  $G_1$  and  $G_2$  that each have the degree sequence  $(6, 6, 6, 5, 5, 3, 3, 3, 3)$ . Justify why your graphs are not isomorphic.

ADDITIONAL EXERCISE 2. For each of the sequences below, explain why they cannot be the degree sequence of any simple graph.

- |                             |                             |
|-----------------------------|-----------------------------|
| (a) $(7, 6, 5, 4, 3, 3, 2)$ | (c) $(6, 6, 4, 4, 3, 2, 1)$ |
| (b) $(5, 5, 5, 5, 3, 3, 3)$ | (d) $(6, 6, 6, 6, 2, 2, 2)$ |