Last name _____

First name _____

LARSON—MATH 356—CLASSROOM WORKSHEET 12
Prufer Codes & Euler circuits

Reminders

1. Remember to email your Notes/Classroom Worksheet prior to the next class.
2. Read ahead in our textbook. Up next we'll move into Chp. 4 and Euler and Hamilton circuits.

Concepts & Notation

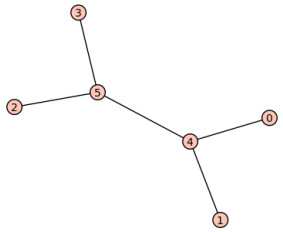
- Sec. 2.3: cut vertex, Prufer code, coding and decoding algorithm, Cayley's Theorem.
- Sec. 4.1: Euler circuits

Review

1. What is a *cut vertex* (Sec. 2.3)?

2. For a tree, a vertex v is a cut vertex if and only if $d(v) > 1$.

Notes



1. What is a *Prufer code* for a tree?

2. How can we decode a Prufer code?

3. How many spanning trees are there of the complete graph K_n (How many different Prufer codes are there for a tree with ν vertices)?

4. What is an *Euler circuit* in a graph?

5. What is a necessary condition for a connected graph to have an Euler circuit?

6. Is this also a sufficient condition?

7. How can we prove it?

8. Can we use this condition to develop a test for whether a (connected) graph is Eulerian?