Week 12
Term 2
2012

Learning Brief

SME1: Number Theory, Graphs and Networks

Goals

By the end of this week, you should be able to:

- Identify the difference between a path and a circuit
- Determine Euler Path and Circuit
- Determine Hamiltonian Path and Circuit
- Become familiar with graphs, sub-graphs, cycles and trees
- Determine whether a given graph is a tree
- Determine the shortest path and appreciate its importance in our lives
- Determine the min/max spanning trees and appreciate its importance in our lives

Theoretical Components

1. Readings:
   I. Chapter 14C and 14D from MQ 12 Further Mathematics
   II. Study the worked examples 10-19 in MQ 12 Further Mathematics
   III. Read through and note any questions for clarification: http://www.ctl.ua.edu/math103/hamilton/euler.htm

2. Videos:
   I. http://www.youtube.com/watch?v=3bUvjajakGM
   II. http://www.youtube.com/watch?v=Lr6C8u-FDL8
   III. http://www.youtube.com/watch?v=wo5EueIGEjk&feature=relmfu

Practical Components

1. Do Ex 14C from MQ 12 Further Mathematics
2. Do Ex 14D from MQ 12 Further Mathematics
3. Do exercises from Chapter Review in MQ 12 Further Mathematics

Forum

Next week.

Quiz

On cLc. To be completed by the end of this week.

Investigation

Below are 3 different Eulerizations of Figure 1. If given a choice, which one would you choose if, for example, this vertex-edge graph represented roads in a city? Why would you choose this one?

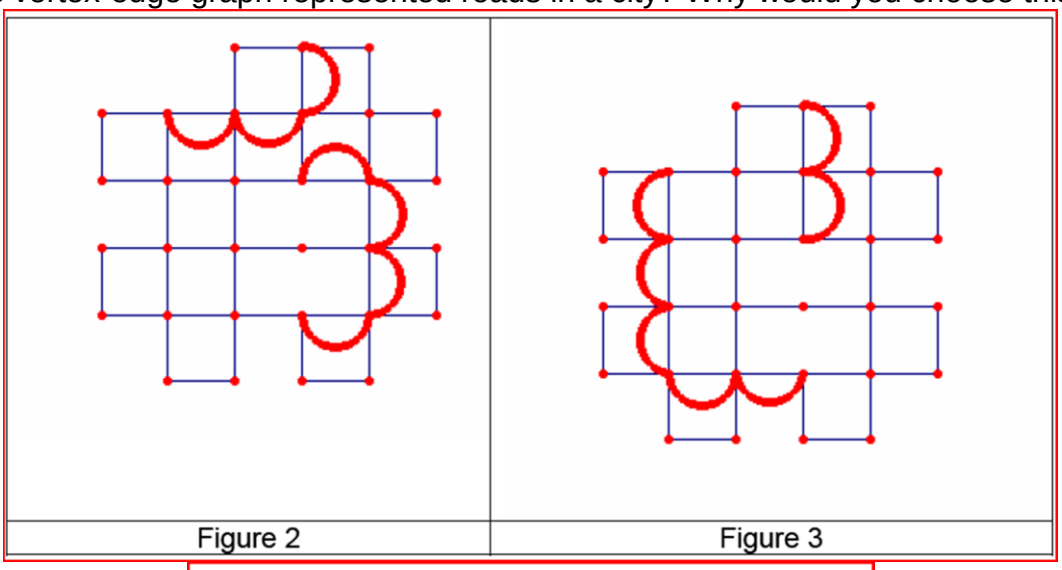

Figure 2

Figure 3

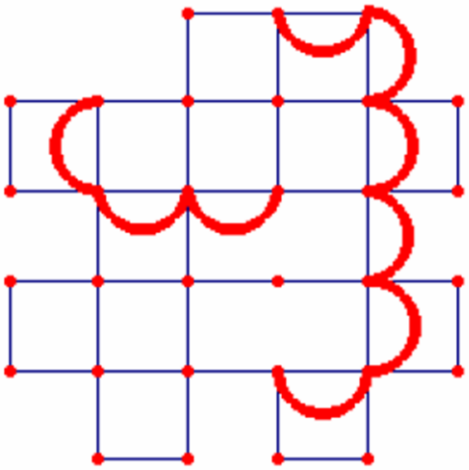

Figure 4