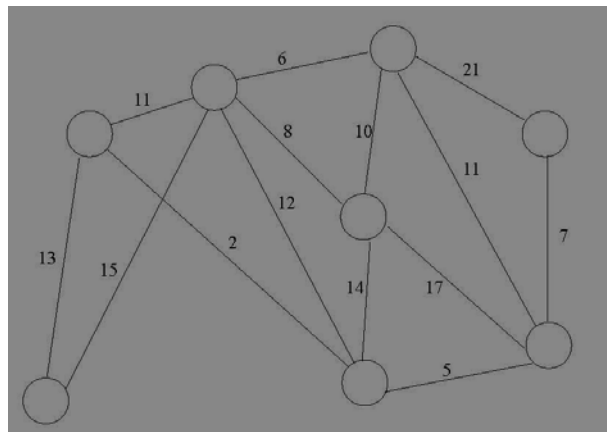


CS477/677 Analysis of Algorithms
Fall 2007 – Dr. George Bebis
Homework 8
Due Date: 12/4/07

1. **(U-required)** Exercise 22.1-7 (page 531)

2. **(U-required)** Compute a minimum spanning tree (MST) for the graph shown below using: (a) Prim's algorithm and, (b) Kruskal's algorithm.



3. **(U-required)** Exercise 23.1-2 (page 566)

4. **(U-required)** Exercise 23.1-6 (page 566)

5. **(U-required)** Let $G=(V,E)$ be any weighted connected graph. If C is any cycle of G , then show (formally) that the heaviest edge of C (i.e., the edge with the largest weight) cannot belong to a minimum spanning tree of G . (Hint: use proof by contradiction; also, see the proof of Theorem 23.1 on page 563).