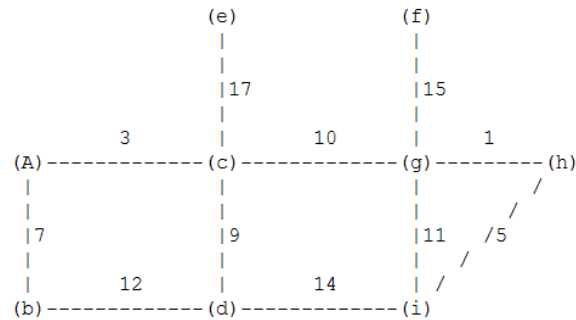# CS 477/677 Analysis of Algorithms
Homework 8
Due December 11, 2018

1. **[20 points] (U&G-required)**

Answer the questions below regarding the following graph:

```
            (e)                (f)
             |                  |
             |                  |
             |17                |15
             |                  |
      3      |        10        |      1
 (A)------------(c)------------(g)---------(h)
  |           |                |         /
  |           |                |        /
  |7          |9               |11    /5
  |           |                |     /
  |     12    |       14       |   /
 (b)------------(d)------------(i)
```

a) [5 points] In what order are edges added to the Minimum Spanning Tree (MST) using Kruskal's Algorithm? List the edges by giving their endpoints.

b) [5 points] In what order are edges added to the MST using Prim's Algorithm starting from vertex A? List the edges by giving their endpoints.

2. **[30 points] (U&G-required)** Exercise 22.2-9 (page 602).

3. **[30 points] (U&G-required)** Exercise 22.5-6 (page 621).

4. **[20 points] (U&G-required)** Exercise 24.3-2 (page 663).

5. **[20 points] (G-required)** Exercise 25.1-6 (page 692).

6. **[20 points] (Extra credit)** Exercise 24.3-6 (page 663).