## University of Nevada, Las Vegas Las Vegas Computer Science 477/677 Fall 2020

Assignment 5: Due Tuesday March 24, 2020

Name: $\qquad$
You are permitted to work in groups, get help from others, read books, and use the internet. But the handwriting on this document must be your own. Print out the document, staple, and fill in the answers. You may attach extra sheets, but only by stapling. Furn in the pages the graduate the beginning of class, March 24.

We will not meet in the classrom on Tuesday. I will post instructions for turning in your homework on the assignments page.

1. Work Problem 4.1 on page 120 of your textbook.


|  | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| A |  |  |  |  |  |  |  |  |  |
| B |  |  |  |  |  |  |  |  |  |
| C |  |  |  |  |  |  |  |  |  |
| D |  |  |  |  |  |  |  |  |  |
| E |  |  |  |  |  |  |  |  |  |
| F |  |  |  |  |  |  |  |  |  |
| G |  |  |  |  |  |  |  |  |  |
| H |  |  |  |  |  |  |  |  |  |

2. Work Problem 4.2 on page 120 of your textbook.

3. You are working on computer which lacks multipliation and addition. However, it can add or subtract 1 or 2 . What does this function do? What is its loop invariant?
```
int double(int n)
    // input condition: n >= 0
    {
        int p = n;
        int q = 0;
        while(p > 0)
        {
            p = p-1;
            q = q+2;
        }
    return q;
}
```

4. Walk through Kruskal's algorithm on the graph shown below. Show the union/find data structure after each step.

