HW7: Released Monday, week 8 and due Thursday, week 8

1. List any students you discussed with on this homework assignment:

These should still be your own answers, but it is ok to check answers and discuss your reasoning with your classmates.

Running code snippets from the homework is ok, but please take a moment to read through the code yourself first and figure out what you think it will do—you will learn how the code works much better if you think through it first before checking, *especially* if your initial assessment was wrong.

 (10 points) Given the following class header file, indicate whether or not each of the following lines is a valid use of member variables and member functions. Assume that none of the function definitions can throw errors—if the function is called correctly, it will work fine.

```
class Point{
      private:
             double x;
             double y;
      public:
             Point(double n1, double n2);
             Point(); // sets x and y to 0
             double getX();
             double getY();
             void setX(double n);
             void setY(double n);
};
a. Point p1(1.3,7.6);
b. Point p1;
C. Point p1(4.6);
d. (Assuming p1 is declared a point and initialized): double xval = p1.getX();
e. (Assuming p1 is declared a point and initialized): p1.setX();
f. (Assuming p1 is declared a point and initialized): p1.setY(3);
g. (Assuming p1 is declared a point and initialized): double yval = p1.getY(4.2);
```

- h. (Assuming p1 is declared a point and initialized): double var = p1.x;
- i. (Assuming p1 is declared a point and initialized): p1.y = 16;
- j. (Assuming p1 is declared a point and initialized): p1.setX(1.2, 1.4);
- 3. (4 points) Write the default constructor (as if it were in an accompanying point.cpp file) for the Point class from the previous problem that sets both the x and y coordinates of the point to 0.

4. (6 points) Assuming the getters for Point just return x and y respectively, with no changes, write code (not a member function) to get the distance between two points, stored in Point objects p1 and p2. You can assume you have the cmath library already installed for the sqrt() function.