Homework #7

Turn In:

1. Exercise #1 – Due in class on Tuesday, November 22, 2016
    a) For each exercise, a hardcopy package must be generated to include the following items:
        - Cover Sheet (use the sample copy include in class/lecture note)
        - Exercise/problem statement
        - Copy of your source files (for examples, **cis25Fall2016YournameHw7Ex1.cpp**, **fractionYourName.h**, **fractionYourName.cpp**, **fractionUtilityYourName.h**, **fractionUtilityYourName.cpp**, **pointYourName.h**, **pointYourName.cpp**, **pointUtilityYourName.h**, **pointUtilityYourName.cpp**, **circleYourName.h**, **circleYourName.cpp, circleUtilityYourName.h**, **circleUtilityYourName.cpp** etc.)
        - Copy of output (copy and paste to the end of your application program as COMMENT block)
        - Copy of YOUR COMMENTS (as a separate comment block) after YOUR PROGRAM OUTPUT
    b) Submitting in class one hard copy for each document
    c) Emailing each document as follows,
        - One message for each exercise.
        - Attaching the source file that was created in part a).
        - The SUBJECT line of the message should have the following line:

        cis25Fall2016YourNameHw7Ex1

3. Q.E.D.

EXERCISE 1

Consider the following classes:

```cpp
class FractionYourName;  // Existing from previous work

class PointYourName;  // Existing from previous work

class CircleYourName;  // To Be Created
```

The incomplete classes and code are given as follows,

```cpp
// Header Files

#endif

/**
 * Program Name: cirleYourName.h
 * Discussion:   Declaration File --
 *                 CircleYourName Class
 */
#ifndef CIRCLEYOURNAME_H
#define CIRCLEYOURNAME_H

#include "fractionYourName.h"
#include "pointYourName.h"

// Declarations

class CircleYourName {
public:

  // YOUR CODE HERE
  //   Must have at least the default constructor,
  //                        copy contructor,
  //                        destructor, and
  //                        assignment operator function
  //   and other members

  // your I/O OPERATOR functions here – friend functions

private:
  PointYourName* cPtr;      // center
  FractionYourName* rPtr;  // No negative value allowed
};

#endif
```

You are asked to

    (1) Add more member functions and operator functions for **Circle** class as needed; and

    (2) Provide complete definitions for all member functions so that each given class is proper and working; and

(3) Add/Provide complete definitions for all needed non-member functions to perform reasonable tasks; and

(4) Save all classes in appropriate **.h** and *.cpp files with appropriate names; and

(5) Run a menu driver program named as **cis25Fall2016YourNameHW7Ex1.cpp** and save the output. A sample program output is given as follows,

    (a) The output screen should have the following lines displayed before any other display or input can be seen,

```
CIS 25 - C++ Programming
Laney College
Your Name

Assignment Information --
  Assignment Number:  Homework 7,
                      Exercise #1
  Written by:         Your Name
  Due Date:           Due Date
```

    (b) Then, the output screen shou*ld also be followed by,

```
*******************************
*          MENU - Hw #7       *
*  1. Initializing (2 Circles) *
*  2. Positioning             *
*  3. Moving                  *
*  4. Comparing               *
*  5. Displaying              *
*  6. Quit                    *
*******************************
Select an option (use integer value only): 2

     Not a proper call as no circles are available!

*******************************
*          MENU - Hw #7       *
*  1. Initializing (2 Circles) *
*  2. Positioning             *
*  3. Moving                  *
*  4. Comparing               *
*  5. Displaying              *
*  6. Quit                    *
*******************************
Select an option (use integer value only): 1

   Initializing Option --

      // Providing proper values & steps!

*******************************
*          MENU - Hw #7       *
*  1. Initializing (2 Circles) *
*  2. Positioning             *
*  3. Moving                  *
```

```
*   4. Comparing                  *
*   5. Displaying                 *
*   6. Quit                       *
*******************************
Select an option (use integer value only): 6

  Having Fun ...
```