COMP 1409 Lab 6-b (4 points)

Take-home lab

A local carpet company has asked you to write an application that calculates the cost of carpeting for rectangular rooms. To calculate the cost, you multiply the area of the floor (width times length) by the price per square foot of carpet.

Create a class called **Room**. Here are the relevant attributes:
      double lengthInFeet
      double widthInFeet

Provide a default constructor and a non-default constructor. Both constructors use the appropriate mutator (set) methods to initialize the fields. The non-default constructor accepts parameters for both instance variables.

Provide an accessor (get) and a mutator (set) for each instance variable. Each mutator validates the passed parameter and uses it only if it is positive.

Provide a method called calculateArea(). This method calculates **and returns** the room area in square feet.

Create another class called **CarpetCalculator**. Here are the relevant attributes:
      double pricePerSquareFoot
      Room room

Provide a default constructor and a non-default constructor. Both constructors use the appropriate mutator (set) methods to initialize the fields. The non-default constructor takes two parameters to initialize the instance variables.

Provide an accessor and mutator for each instance variable. The mutator for the price validates the passed parameter and uses it only if it is positive. The mutator for the Room field validates the passed parameter and if null creates a new Room object using the default constructor for the Room class. If the parameter is not null it is assigned to the instance variable.

Provide a method called calculateTotalCost(). This method calculates **and returns** the total cost of the carpet for that room.

Provide a method to display the dimensions of the room, the price per square foot of the carpet and the total cost of the carpet for that room.

The take-home lab is due before midnight the night before the next class. Upload it to the appropriate D2L dropbox. A suggested solution will be discussed in class and labs not already in the dropbox will not receive any points.