Lab 10: Ch14 Object-Oriented Programming

Prob. 1

Create a class named 'Circle'. With this class, you can calculate the perimeter and the area of a circle. The following formulas would be used:

perimeter = 2 * 3.14 * radius

area = 3.14 * radius * radius

Using this class, create instances with the radius = 1 or 5 inches. Call the two methods to calculate the perimeter and area for each instance. Print out the results.
P.S. Please note the digit part format (i.e. x.xx, only two digits are kept)

```
Your circle with radius 1 inch has an area of 3.14 and a perimeter of 6.28.
Your circle with radius 5 inch has an area of 78.50 and a perimeter of 31.40.
```

Prob. 2

Create a class named "bankBalance" with the attribute "balance". When you deposit, the balance will increase; when you withdraw, the balance will decrease. After you finish the class, create one account with a balance of $1000, and another account with a balance of $2000. Apply the deposit of $100, and withdraw of $500 to both instances, and calculate the final balances.

```
The final balance for a is $600
The final balance for b is $1600
```

Prob. 3

Write a class called " GOT_cast" to takes a character's height in inches and weight in pounds as input, computes the BMI and determines whether the person is underweight, normal weight, overweight or obese. The BMI formula is BMI = (weight / (height * height)) * 703. Determine a character's BMI category using the following: underweight (BMI < 18.5), normal weight (18.5 <= BMI < 25), overweight (25 <= BMI < 30), obese (BMI >= 30). You must print out the result using class methods as shown below.

```
The BMI for "Jon Snow" with height 68 inches and weight 170 lbs is: 25.85.
The category is overweight
The BMI for "Samwell Tarly" with height 68 inches and weight 238 lbs is: 36.18.
```