Python Class Exercise Set 1

Exercise

- Declare a variable for the currency in Euros
- Convert the amount to Dollars and assign to another variable, rounded to two decimal places
- Print the euro amount and the dollar amount in a user-friendly format

Answer

```
euros = 200
xchng = 1.09
dollars = round (euros*xchng, 2)

print ("Euros =", euros)
print ("Exchange Rate = ", xchng)
print ("Dollars = ", dollars)
```

Exercise

- Declare a variable for billed amount, and assign an arbitrary value to it.
- Declare a second variable for tip percentage, and assign an arbitrary value to it.
- Declare a third variable for total due, derived from the first two variables.
- Print the billed amount, the tip percentage, and the total due in a user-friendly format
- Plug is different values and ensure above works as expected.

Answer

```
billed = 200
tip = 0.15
total = round(billed*(1+tip),2)

print ("Billed Amount =", billed)
print ("Tip = ", tip)
print ("Total Due = ", total)
```

Exercise

- Declare a variable for the radius of a circle and assign an arbitrary value to it
- Calculate the circumference of the circle ($2\pi r$) and assign to another variable
- Calculate the area of the circle (πr^2) and assign to another variable
- Print the radius, circumference and area in a user-friendly format

Answer

```
radius = 10
circum = round(2*math.pi*radius, 2)
area = math.pi*pow(radius, 2)
area = round(area, 2)

print ("Radius =", radius)
print ("Circumference = ", circum)
print ("area = ", area)
```

Exercise

- Declare a variable and assign it an arbitrary integer value
- Test whether the variable is even or odd and assign the result to another variable
- Print the variable, and whether it is even or odd in a user-friendly format

Answer

```
number = 21
remainder = number%2
isEven = (remainder==0)

print ("Number =", number)
print ("Number%2 =", remainder)
print ("Is number Even?", isEven)
```

Exercise

- Declare a variable and assign it a dollar value of 259

- Print the minimum number of 20, 10, 5 and 1 dollar bills will need to make up the dollar amount

Answer

```
dollars = 259
dolarsLeftToBreak = dollars

num20s = math.floor(dolarsLeftToBreak/20)
dolarsLeftToBreak = dolarsLeftToBreak%20

num10s = math.floor(dolarsLeftToBreak/10)
dolarsLeftToBreak = dolarsLeftToBreak%10

num5s = math.floor(dolarsLeftToBreak/5)
dolarsLeftToBreak = dolarsLeftToBreak%5

num1s = math.floor(dolarsLeftToBreak/1)

print ("Dollar Amount =", dollars)
print ("Number of 20s = ", num20s)
print ("Number of 10s = ", num10s)
print ("Number of 5s = ", num5s)
print ("Number of 1s = ", num1s)
```