**Module 4 Practice Exercises**

**COMPSCI 115**

1. create a function that accepts the distance in miles and the driving time minutes from the input of the user. This function will display the speed in miles/hour hint speed=distance/ time  
    call the function using 300 miles and 500 minutes as inputs
2. Create a function that calculate the net gross of a salary. The salary should be accepted by the input function. Display the net salary  
   the net salary is based on the following:  
   if salary >100,000 then the taxes are 29%

if the salary is Between 90,000 and 100,000 then the taxes will be 22%  
 if the salary is less 90,000 then the taxes will be 19%

1. Assume that a gallon of paint covers about 350 square feet of wall space. Create a function that prompts the user for the length, width, and height of a rectangular room. Name this function as wall\_area() that does the following:

Area =2\*Height\*length+ 2\*height\*width

* Calculates the wall area for a room
* Passes the calculated wall area to another function gallon\_and\_price() that does the following
  + calculates and returns the number of gallons of paint needed:
  + Displays the number of gallons needed
* Computes the price based on a paint price of $32 per gallon, assuming that the painter can buy any fraction of a gallon of paint at the same price as a whole gallon

Hint: to calculate the needed gallons, use this line to import math package: import math

To get the ceiling of a number use math.ceil()

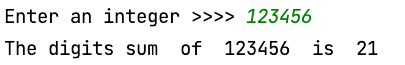
For example, the cost to paint a 15-by-20-foot room with 10-foot ceilings is $64

1. To encourage good grades, Hermosa High School has decided to award each student a bookstore credit that is 10 times the student’s grade point average. In other words, a student with a 3.2 grade point average receives a $32 credit. Create a function that prompts a student for a name and grade point average, and then display the student’s name, echoes the grade point average, and computes and displays the credit.
2. Create a function that that accepts number from 1 to 12, if the input is 1 than print January  
    if the input is 2 than print February  
    if the input is 3 than print March  
    if the input is 4 than print April  
    if the input is 5 than print May  
   ...  
    if the input is 12 than print December
3. (Sum the digits in an integer) Write a function that computes the sum of the digits in an integer. Use the following function header:

**def** sumDigits(n):

For example, sumDigits(234) returns 9 (2+3+4).(2+3+4). (Hint: Use the % operator to extract digits, and the // operator to remove the extracted digit. For instance, to extract 4 from 234, use 234 % 10 (=4). To remove 4 from 234, use 234 // 10 (=23). Use a loop to repeatedly extract and remove the digits until all the digits are extracted.) Write a test program that prompts the user to enter an integer and displays the sum of all its digits.

Here is a sample run:



7. (Conversions between Celsius and Fahrenheit) Write a program that contains the following two functions:

# Convert from Celsius to Fahrenheit

**def** celsiusToFahrenheit(celsius):

# Convert from Fahrenheit to Celsius

**def** fahrenheitToCelsius(fahrenheit):

The formulas for the conversion are:

celsius = (5 / 9) \* (fahrenheit – 32)

fahrenheit = (9 / 5) \* celsius + 32

Write a test program that invokes these functions to display the following tables:

