# Programming Exercise 6A

**NOTE: All programs that you write must have comments at the top with 1) the program name, 2) your name, and 3) a sentence describing what the program does.**

**For all programs going forward, whenever you print something, make sure it has a label.**

**1)** Create a program called **Lab6A1** that will use functions to calculate the area of different types of shapes.

- Write a function named **square** that will accept a numerical value with the length of a side. It should calculate the area of the square and print a statement with the type of shape and the area.
- Write a function named **hexagon** that will accept a numerical value with the length of a hexagon side. It should calculate the area of the hexagon and print a statement with the type of shape and the area. (Look up the formula online.)
- Write a function named **octagon** that will accept a numerical value with the length of a octagon side. It should calculate the area of the octagon and print a statement with the type of shape and the area.

- Create a main function that will read an unknown number of lines from an input file. (Lab6A1.txt)
  Each line will have an integer with the number of sides that the shape has and a second value with the side length.
  It should do the following for each line:
  - Print the number of sides and the side length
  - Based on the number of sides, call the appropriate function to calculate and print the shape type and area.

2) Create a second program named **Lab6A2** that will read an unknown number of integers from a text file and add up the digits in each number.

- Write a function named **addDigits** that will accept a string version of a number and will do the following:
  - Convert the string number into a list of digits
  - Loop through the list and convert each element to an integer.
    Also add up the integers after you convert them.
  - Return the total.

- Create a main function that will read an unknown number of integers from an input file. (Lab6A2.txt)
  It should do the following for each number (remember that a number read from a text file is really a string):
  - Call **addDigits** sending the number as a parameter.
  - Print the number itself and the result returned from **addDigits**