Assignment Submission Guidelines:

Individually submit through dropbox on avenue.

1. Submit programs for all problems as separate files in a zip folder.
2. Code should contain proper COMMENTS. First comment must include your authorship.
    //Author: Full Name ID

Problem 1- (Calculating Circle Circumference, Circle Area or Sphere Volume **Using Function Pointers**). Create a text-based, menu-driven program that allows the user to choose whether to calculate the circumference of a circle, the area of a circle or the volume of a sphere. The program should then input a radius from the user, perform the appropriate calculation and display the result. Use an array of function pointers in which each pointer represents a function that returns void and receives a double parameter. The corresponding functions should each display messages indicating which calculation was performed, the value of the radius and the result of the calculation. **(Marks 3)**

Problem 2- (Calculator Using **Function Pointers**). Create a text-based, menu-driven program that allows the user to choose whether to add, subtract, multiply or divide two numbers. The program should then input two double values from the user, perform the appropriate calculation and display the result. Use an array of function pointers in which each pointer represents a function that returns void and receives two double parameters. The corre-sponding functions should each display messages indicating which calculation was performed, the values of the parameters and the result of the calculation. **(Marks 3)**

Problem 3- (Pig Latin) Write a program that encodes English-language phrases into pig Latin. Pig Lat-in is a form of coded language often used for amusement. Many variations exist in the methods used to form pig-Latin phrases. For simplicity, use the following algorithm:

To form a pig-Latin phrase from an English-language phrase, tokenize the phrase into words with function strtok. To translate each English word into a pig-Latin word, place the first letter of the English word at the end of the English word and add the letters "ay". Thus the word "jump" becomes "umpjay", the word "the" becomes "hetay" and the word "computer" becomes "omputer-cay". Blanks between words remain as blanks. Assume the following: The English phrase consists of words separated by blanks, there are no punctuation marks, and all words have two or more let-ters. Function printLatinWord should display each word. [Hint: Each time a token is found in a call to strtok, pass the token pointer to function printLatinWord, and print the pig-Latin word. Note: We've provided simplified rules for converting words to pig Latin here. For more detailed rules and variations, visit en.wikipedia.org/wiki/Pig_latin.] **(Marks 3)**