```
#Class:      CSE1321L
#Section:    19
#Term:       Spring 19
#Instructor: Kevin Markley
#Name        Clay Waddell
#Lab#:       2
```

Assignment #

Problem 1- Design (pseudocode) and implement (source code) a program (name it `Cylinder`) to compute the volume of a cylinder using the following formulas (PI is 3.14):

```
Area   = radius * radius * PI
Volume = area * length
```

```
BEGIN MAIN

PRINT “Please enter Radius of cylinder.”
READ radius
PRINT “Please enter length of Cylinder”
READ length
CREATE  pi <- 3.14
CREATE area <- (radius * radius * pi)
CREATE volume <- (area * length)
PRINT “The area of your cylinder is: “ + area
PRINT “The volume is: “ + volume

END MAIN
```

Problem 2 - Design (pseudocode) and implement (source code) a program (name it `SumDigits`) to sum the total of all digits in an input integer number between 0 and 1000, inclusive. Notice that you need to extract individual digits from the input number using the remainder (modulus) and division mathematical operators. For example, if the input number is 123, the sum of its digits is 6.

```
BEGIN MAIN

PRINT “Please enter a number between 0 and 1000”
READ userInput
CREATE sum
sum <- 0
sum <- + (userInput % 10)
#to get last digit.
userInput / 10
#to drop last digit
REPEAT FOR userInput>0
PRINT “The sum of your digits is” + sum

END MAIN
```

Problem 3 - Design (pseudocode) and implement (source code) a program (name it `Distance`) to compute the distance between 2 points. The program prompts the user to enter 2 points (X1, Y1) and (X2, Y2). The distance between 2 points formula is:

```
Square_Root [(X2 – X1)^2 + (Y2 – Y1)^2]
```

```
BEGIN MAIN

PRINT “Please enter ‘X’ value of point 1”
READ xOne
PRINT “Please enter ‘Y’ value of point 1”
READ yOne
PRINT “Please enter ‘X’ value of point 2”
READ xTwo
PRINT “Please enter ‘Y’ value of point 2”
READ yTwo
distance ←Square_Root [(xTwo – xOne)^2 + (yTwo –xOne)^2]
PRINT “The distance between the two points you entered is:”, distance “.”

END MAIN
```

Problem 4 - Design (pseudocode) and implement (source code) a program (name it `DrivingCost`) to compute the cost of a road trip. The program prompts the user to enter the distance to be traveled, the car fuel efficiency (mile per gallon), and the fuel cost per gallon. The program computes and displays the trip cost.

```
BEGIN MAIN

PRINT “Please enter the number of miles to be traveled: “
READ travelDistance
PRINT “Please enter your average MPG: “
READ MPG
PRINT “Please enter estimated $/Gallon
READ fuelCost
fuelUse ← travelDistance / MPG
tripCost ← fuelUse * fuelCost
PRINT “The estimated cost of your travel is: “, tripCost

END MAIN
```