SOLUTIONS TO PSEUDOCODE LAB EXERCISES

Compiled By: **AMPOMAH PETER**

Triangle Program

****

Begin

Declare Real Area, height, base

Display "Enter the height"

Input height

Display "Enter the base"

Input base

Set Area = 0.5*base*height

Display "The area of the triangle is ", Area

End

PAGE 27 Q1

Begin

Declare String name

Declare Integer age

Display "Enter your name"

Input name

Display "Enter your age"

Input age

Display "Hello ", name, "you are ", age " years old"

End

Q2

Sales Prediction Program with comments

****

Begin

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//Declare variables

Declare Real Amount

Declare Real totalSales

//Ask user to enter amount

Display "Enter amount"

Input Amount

//calculate for total sales

Set totalSales = 0.23 * Amount

//Display total sales to the user

Display "The annual profit of the company is ", totalSales

End

Q3

Land Calculation **********

Begin

Declare Real numberOfAcres

Constant Real oneAcre = 43560

Declare Real totalSquareFeet

Display "Enter total square feet of land"

Input totalSquareFeet

Set numberOfAcres = totalSquareFeet / oneAcre

Display "The number of acres in the land is " numberOfAcres “

End

Q4

Total Purchase

****

Begin

Declare Real item_1, item_2, item_3, item_4, item_5

Declare Real subTotal

Declare Real amountOfSalesTax

Declare Real total

Display "What is the price of item 1?" Input item_1
Display "What is the price of item 2?" Input item_2
Display "What is the price of item 3?" Input item_3
Display "What is the price of item 4?" Input item_4
Display "What is the price of item 5?"
Input item_5
Set subTotal = item_1 + item_2 + item_3 + item_4 + item_5
Display "Sub-Total of items purchased is ", subTotal
Set amountOfSalesTax = 0.06 * subTotal
Display "Amount of Sales Tax is ", amountOfSalesTax
Set total = amountOfSalesTax + subTotal
Display "The total amount purchased is ", total
End

Q5

Distance Traveled in (5, 8, 12) hours

****

Begin

Declare Real distance

Declare Real speed

Declare Real time

Set speed = 60

Set time = 5

Set distance = speed * time

Display "The distance the car will travel in ", time, "hours is ", distance Set time = 8
Set distance = speed * time

Display "The distance the car will travel in ", time, "hours is ", distance Set time = 12
Set distance = speed * time

Display "The distance the car will travel in ", time, "hours is ", distance

End

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Displaying the Roman Numeral of 1 - 5 using If-Then-Else-If

****

```
Begin
Declare Real number
Display "Enter a number from 1 to 5"
Input number
If number==1
  Display "I"
Else If number==2   Display "II"
Else If number==3   Display "III"
Else If number==4   Display "IV"
Else If number==5
  Display "V"
Else
  Display "Error: Number should be within the range of 1 to 5"
End If
End
```

Displaying the Roman Numeral of 1 - 5 using Case Structure

****

```
Begin
Declare Real number
Display "Enter a number from 1 to 5"
Input number
Select number
Case:1
  Display "I"
Case:2
  Display "II"
```

```
Case:3
  Display "III"
Case:4
  Display "IV"
Case:5
  Display "V"
Default:
  Display "Error: Number should be within the range of 1 to 5"
End Select
End
```

Average of 3 tests

****

```
Begin
Declare Real test1, test2, test3, average
Display "Enter test 1 score" Input test1
Display "Enter test 2 score" Input test2
Display "Enter test 3 score"
Input test3
Set average = (test1 + test2 + test3)/3
Display "The average test score is ", average
End
```

Area of a circle using a constant for PI

****

```
Begin
Constant Real PI = 3.142
Declare Real Area, radius
```

Display "Enter the radius"

Input radius

Set Area = PI * radius * radius

Display "The area of the circle is ", Area

End

CHAPTER 3 MODULES

Q1

Modular Program of Kilometer Converter (Miles = Kilometers x 0.6214)

****

Begin

Module Miles()

Declare Real Miles, Kilometers

Display "Enter your kilometers" Input Kilometers
Set Miles = Kilometers * 0.6214 Display "The distance covered in miles is ", Miles
End Module

End

Q 2

How Much Insurance?

****

Begin

```
Module Insurance()
Declare Real cost, insuranceAmount
Display "Enter your replacement cost"
Input cost
Set insuranceAmount = 0.8 * cost
Display "The minimum amount of insurance to be bought is ", insuranceAmount
End Module
End
```

Q3

Automobile Costs **********

```
Begin
Module autoMobile()
Declare Real loanPayment, insurance, gas, oil, tires, maintenance
Declare Real monthlyCost, annualCost
Display "Enter the monthly cost of Loan Payment"
Input loanPayment
Display "Enter the monthly cost of Insurance"
Input insurance
Display "Enter the monthly cost of Gas" Input gas
Display "Enter the monthly cost of Oil"
Input oil
Display "Enter the monthly cost of Tires"
Input tires
Display "Enter the monthly cost of Maintenance"
Input maintenance
Set monthlyCost = loanPayment + insurance + gas + oil + tires + maintenance
Display "The monthly cost incurred is ", monthlyCost
Set annualCost = monthlyCost * 12
Display "The annual cost incurred is ", annualCost
End Module
End
```

Q5

Property Tax

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Begin

Module propertyTaxCalculator()

Declare Real propertyValue, assessmentValue, propertyTax

Display "Enter the actual value of a property"

Input propertyValue

Set assessmentValue = propertyValue * 0.6

Set propertyTax = (assessmentValue / 100) * 0.64

Display "The assessment value is $", assessmentValue

Display "The property tax is $", propertyTax

End Module

End

Number of Calories

****

Begin

Declare Real Calories, bodyWeight

Display "Enter your weight"

Input bodyWeight

Set Calories = bodyWeight * 19

Display "The number of calories needed is ", Calories

End

Printing a pyramid of asterisks

****

Display "*"

Display "**"

Display "***"

Display "****"

Display "*****"

Display "******"

Display "*******"

Display "********"

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Q2

Mass and Weight

****

Begin
Declare Real Weight
Declare Real Mass
Display "Enter the mass of the object"
Input Mass
Set Weight = Mass * 9.8
Display "The Weight of the object is ", Weight
If Weight>1000 Then
  Display "The object is too heavy" If Weight<10
Then
  Display "The object is too light"
End If
End If
End

Q2

Areas of Rectangles **********

Begin

Declare Real area1, area2, length1, length2, width1, width2

Display "Enter the length of the 1st rectangle"

Input length1

Display "Enter the width of the 1st rectangle"

```
Input width1
Set area1 = length1 * width1
Display "Enter the length of the 2nd rectangle"
Input length2
Display "Enter the width of the 2nd rectangle"
Input width2
Set area2 = length2 * width2
If area1 > area2 Then
  Display "Area of 1st Rectangle is greater than area of 2nd rectangle"
Else If area2 == area1 Then
  Display "The areas are the same"
Else
  Display "Area of 2nd Rectangle is greater than area of 1st rectangle"
End If
End
```

Q3

If-Then-Else Number Assignment

```
**********************************
Begin
If a < 10 Then
  Set b = 0
Else
  Set b = 99
End If
End
```

AMPOMAH PETER (MR.
INFOTESS @ HEART