Using pseudocode, write algorithms for the following scenarios. Algorithm only, no Python coding!

1. List all of the steps for asking the user what their first name is, then print out a message (which includes the name they had entered) welcoming them to COSC7420C.

(*Of course there are many possible algorithms to solve a given problem, so don’t worry if your one differs from the examples. If you are uncertain about anything, see you teacher)*

BEGIN

PRINT “Please enter your name”

READ userName

PRINT “Welcome to COSC7420C “

PRINT userName

END

1. List all of the steps for asking the user for the current year, then what year they were born in. Tell the user how many years old they are.

BEGIN

PRINT “Please enter the current year”

READ currentYear

PRINT “What year were you born in?“

READ birthYear

CALCULATE age = currentYear – birthYear

PRINT “You are “

PRINT age

PRINT “ years old”

END

1. List all of the steps for obtaining three numbers from the user, then adding all together and printing the final total.

BEGIN

PRINT “Please enter a number”

READ num1

PRINT “Please enter a number”

READ num2

PRINT “Please enter a number”

READ num3

CALCULATE total = num1 + num2 + num3

PRINT “Total is “

PRINT total

END

1. List all of the steps for obtaining a user’s annual salary, and calculating the amount of taxes they owe. Assume a flat tax rate of 35%.

BEGIN

SET taxRate = 0.35

PRINT “Please enter your annual salary”

READ salary

CALCULATE taxPayable = salary \* taxRate

PRINT “You owe “

PRINT taxPayable

END

1. Assume a bank account has $100.00. List all the steps for asking the user how much money they wish to withdraw, alter the balance accordingly and print out the new balance.

(*As a side question, what would happen if the user withdrew $150.00?*)

BEGIN

SET balance = 100.00

PRINT “Please enter amount to withdraw”

READ withdrawAmount

CALCULATE newBalance = balance – withdrawAmount

CALCULATE balance = newBalance

PRINT “Balance is now “

PRINT balance

END

*Note that we updated the balance to the new balance value.*

*There isn’t anything stopping the balance from becoming negative. So if the user withdrew $150, the balance would be -50*