Q1 (25 pts): Repetition – Papers, Please? One of the most frustrating things about technology is forgetting your password, incorrectly guessing it multiple times, and then being locked out of your account. Using either a WHILE or DO-WHILE loop (only), write a program that will repeatedly ask the user for his/her name and password, and then print “Welcome!” upon a successful login. However, after 10 incorrect attempts, they should not receive a greeting, but instead the message “See system administrator to reset password, sucker!” For this question, accept only one account name: “jbub” whose sickening password is “SparklingPuppies”.

Answer is in Pseudocode: □ C#: □ Java: □ C++: □

Q2 (20 pts): Methods – Hunger Games: Assume that the average person can consume 2500 calories in one day without gaining any weight. There are 3500 calories in one pound of fat. Your job is to write a function/method that takes in two parameters: 1) the number of calories per day that a person eats and 2) the number of years a person will eat that many calories. The program will return the number of pounds the person will gain (and technically work for losing weight as well). Yes, there are 365 days in one year! Note: a person that eats 2500 calories a day will not gain weight (for this question). Why?

Answer is in Pseudocode: □ C#: □ Java: □ C++: □

Continue answer for Question 2 here if necessary:

Q3 (10 pts): Methods Part 2: Correctly call the method in Q2 two times and print the results.

Answer is in Pseudocode: □ C#: □ Java: □ C++: □

Q4 (25 pts): OOP – The Most Boring Class Alive. Almost all programming textbooks insist on including a Rectangle class example that includes two class variables - width and height. It also includes three methods inside the class – a constructor (that takes in a width and height as parameters), Area (that returns the area of the rectangle), and Perimeter (which returns the perimeter of the rectangle). Write class Rectangle, including its class variables and methods, and try not to fall asleep. Must… stay… awake….zzzzzzz

Answer is in Pseudocode: □ C#: □ Java: □ C++: □

Q5 (15 pts): 1D – Triple Threat! Imagine we have an array (called “bob”) of 10,000 random numbers that will be fed into a program. However, if there are three zeroes in a row (000), the program will break, the computer will smoke, and life as we know it will cease to exist. Write code that scans array *bob* and detects if three zeroes appear in a row. If three zeroes do appear in a row, print “SMOKE! RUN!”. Otherwise, the program should not output anything. Hint: start by finding the first zero. What should you check for next?

Answer is in Pseudocode: □ C#: □ Java: □ C++: □

Q6 (5 pts): The code below is the closest implementation of which of the following sorts:

1. BubbleSort

Answer is (write large and legible):

1. SelectionSort
2. None of the above

CREATE numbers[7]

numbers ← { 88, 71, 47, 93, 62, 15, 49 }

CREATE temp

FOR i ← 0 to 6

FOR j ← 0 to 6 - (i-1)

IF (numbers[j + 1] < numbers[j]) THEN

temp = numbers[j]

numbers[j] = numbers[j + 1]

numbers[j + 1] = temp

END IF

END FOR

END FOR