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**Grade: /25**

**COSC 1435.001**

**Lab 5B**

Please use this document to submit your answers (Save As). Make sure you write your name in the designated space in this document.

***Please follow correct C++ syntax. You may need to turn off auto capitalization (AutoCorrect options) or “undo” whenever auto capitalization occurs.***

1. Write C++ expressions for the following algebraic expressions: [4 points]

1. f = 

f = (h + 12) / (4 \* k);

1. g = 

g = pow(a, 55.0) / (pow(b, 33.0) \* pow(k, 2.0))

1. Assume value is an integer variable. If the user enters 3.14 in response to the following programming statement, what will be stored in value? [2 points]

cin>> value; = 3

1. Write the equivalent C++ statements using combined assignment operators [4 points]

inv = inv - shrinkage;

num = num % 2;

1. Write an algorithm in **pseudocode** to determine whether any 5 letter word is a palindrome. Palindromes are words or sentences that read the same backward or forward. For example, “kayak” is a palindrome while “meter” is not. Ask the user to input **5 characters**. You will need five separate variables to store these five characters. After obtaining the characters, compare the characters to determine if the word is a palindrome and output an appropriate message. [7 points]

Print “Let’s make a Palindrome! Enter five charcters, each followed by a space”

Get let1, let2, let3, let4, let5;

If (let1 == let5 && let2 == let4)

Print “Good job! You made a Palindrome!”

Else

Print “Sorry, but that’s no palindrome.”

end

1. The local t-shirt shop sells shirts that retail for $12. Quantity discounts are given as follow:

**Number of Shirts Discount**

5–10 10%

11–20 15%

21–30 20%

31 or more 25%

Write an algorithm in pseudocode that prompts the user for the number of shirts required and then computes the price per shirt and the total price. Make sure the algorithm accepts only nonnegativeinput. [8 points]

Print “Hello, how many shirts will you be needing today?”

Get numshirts

If (numshirts < 5)

Multiply numshirts \* 12, print total

Else if (numshirts >= 5)

Multiply numshirts \* (12 \* .10), print total

Else if (numshirts >= 11)

Multiply numshirts \* (12 \*.15), print total

Else if (numshirts >=21)

Multiply numshirts \* (12 \* .2), print total

Else if (numshirts >=31)

Multiply numshirts \* (12 \* .25), print total

Else if (numshirts <=0)

Print “Go buy some shirts cheapass”

End if