**Algorithm Workbench – pseudo code examples  
1. A bowling alley is offering a prize to the bowler whose average score from bowling three games is the lowest. Write a pseudo code algorithm for a program that inputs three bowling scores and calculates and displays their average.** //Include appropriate input promptsInput score1  Input score2  Input score3  average = (score1 + score2 + score3) / 3.0 Display average **2. Pet World offers a 15% discount to senior citizens. Write a pseudo code algorithm for a program that inputs the amount of a sale, then calculates and displays both the amount the customer saves and the amount they must pay.** discountPct = .15 //Include appropriate input prompts Input salesAmt  amtSaved = salesAmt \* discountPct amtDue = salesAmt – amtSaved Display amtSaved, amtDue **3. A retail store grants its customers a maximum amount of credit. Each customer’s available credit is his or her maximum amount of credit minus the amount of credit used. Write a pseudo code algorithm for a program that asks for a customer’s maximum credit and amount of credit used, then calculates and displays the customer’s available credit.** //Include appropriate input prompts Input maxCredit  
 Input creditUsed  
 availableCredit = maxCredit – creditUsed  
 Display availableCredit **4. Little Italy Pizza charges $12.00 for a 12-inch diameter sausage pizza and $14.00 for a 14-inch diameter sausage pizza. Write the pseudo code algorithm that calculates and displays how much each of these earns the establishment per square inch of pizza sold. (Hint: you will need to first calculate how many square inches there are in each pizza.)** //Include appropriate input prompts  
 PI = 3.14   
 PRICE\_PIZZA12 = 12.00  
 PRICE\_PIZZA14 = 14.00  
 areaPizza12 = PI \* (12 / 2)2  
 areaPizza14 = PI \* (14 / 2)2  
 pricePerSqIn12 = PRICE\_PIZZA12 / areaPizza12  
 pricePerSqIn14 = PRICE\_PIZZA14 / areaPizza14  
 Display pricePerSqIn12, pricePerSqIn14

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**Sample programming challenges – some algorithms to write pseudocode…**

**1) Car Type: Honda Fit**

45 Miles per Gallon with a 13 gallon tank

How many miles can you drive on a full tank of gas?

If the current price for gas is $3.89 per gallon what is the total cost to fill the tank?

How much would it cost you for every mile you drive?

**2) A Box of Bigelow of Green Tea with 20 tea bags cost $3.89 at your local Safeway store.**

What is the cost per bag of tea?

Let’s say Starbucks sold a cup of Bigelow Green Tea plain for $2.25, what is the gross profit per cup?

What might be the other operational expenses to figure in at a later point?

**3) You took an “interest free” student loan of $6000 per year for four years.**

If you are able to pay $350 per month, how many months will it take for you to complete paying off the full loan?  
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**Sample programming challenges – some algorithms to hard code from pseudocode..**

4) Convert the following pseudo code to C++ code. Be sure to define the appropriate variables.   
Store 30 in the *speed* variable.   
Store 10 in the *time* variable.  
Multiply *speed* by *time* and store the result in the *distance* variable. Display the contents of the *distance* variable.

5) Convert the following pseudo code to C++ code.Be sure to define the appropriate variables.  
Store 172.5 in the *force* variable.   
Store 27.5 in the *area* variable.

Divide *force* by *area* and store the result in the *pressure* variable. Display the contents of the *pressure* variable.