**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 prompts

Input 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 think about?**

**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?