

CIS 121 Introduction to Programming
Problem Set 3 – sequential code and the if statement

1. Allow a user to enter a quantity of an item. If the quantity is greater than or equal to 1000, the unit price should be \$3.00. For quantities under 1000 the unit price is \$5.00. Compute extended price to be quantity x unit price. Compute tax to be 7% of the extended price. The total is computed as extended price plus the tax. Display the quantity, unit price, extended price, tax and total.

input	process	output
quantity of items	if quantity ≥ 1000 *3.00 else quantity < 1000 *5.00	total if quantity is ≥ 1000
	extended price*.07 tax	total if quantity is < 1000
	tax+extended price=total	

2. The program asks the user for an item and quantity. Determine the unit price of the item based on the chart below. Compute the extended price to be quantity x unit price. Display the item, unit price and extended price. Note: if the item entered is not A then assume the item is B. No need to check for B.

Item	Unit Price
A	\$10.00
B	\$20.00

input	process	output
item	if item A then unit price =10 if item is not A unit price is =20	extended price
quantity of items	extended price=quantity*unit price	

3. Enter the number of books to order and cost per book. If the order total is over \$50.00 shipping is free. If the order total is \$50.00 or under charge \$25 shipping.

Display the order total and shipping charge (note 0 should display for a free shipping charge).

input	process	output
number of books	order total= number of books* cost per book	display the order total
cost of book	determine shipping charge based on total order	display the shipping charge
	if order total > 50.00 shipping charge =0.00 if order total >= 50.00 shipping charge 25.00	

4. The warranty of an appliance depends on the cost of the appliance. For appliances over \$1,000 the warranty cost is 10% of the price. For appliances \$1,000 or less the warranty cost is 5% of the price. The user will enter the name and cost of an appliance. Display name and cost of appliance, the cost of the warrantee and the total (cost of the appliance + warranty).

input	process	output
name and cost of appliance	determine warranty cost	display name cost warranty cost and total cost
	if cost > 1,000 warranty cost =10% of cost if cost <= 1,000 warranty cost = 5% of the cost	
	total cost = cost + warranty cost	

5. Enter the user's last name, number of dependents and gross income. Compute adjusted gross income to be gross income minus dependents times \$12000. Next determine an income tax rate. Adjusted gross incomes over \$50,000 have a tax rate of 20%. Adjusted gross incomes \$50,000 or under have a tax rate of 10%.

Once you determine the tax rate, compute income tax to be adjusted to the gross income times tax rate. If the income tax is less than 0, set the income tax to \$100.

Display last name, gross income, number of dependents, adjusted gross income, and income tax.

input	process	output
last name	adjusted gross income= gross income-(dependents*1200)	display last name, gross income, number of dependents, adjusted gross income, income tax
number of dependents	if adjusted gross income > 50,000 tax rate = 20% if adjusted gross income <= 50,000 tax rate = 10%	
gross income	income tax= adjusted gross income * tax rate	