The magic and the dangers of LOGICAL operators, logic of flow of control and Order of precedence

We are selling movie tickets and want to give a discount to those individuals who are 12 years old and younger or those individuals that are 65 years old or older AND they must buy a ticket to a G rated movie to be eligible.

Does this work? Why or why not? Use a flowchart and test data to prove.

```
IF  age < = 12  or age >= 65  and movierating= "G"
    Display " You get a discount"
ENDIF
```

Does this work ? Why or why not? Use a flowchart and test data to prove.

```
IF  movierating = "G" and age <= 12   OR  age >= 65
  Display " You get a discount"
ENDIF
```

Word Problem – Decision Structure

A carpenter needs a program to calculate the cost of his custom made desk. Based on the following criteria the price is computed:

The Minimum charge (base price) for all desks is $200.

If the surface area (Length * width) of the desk is over 750 sq inches there is a surcharge of $50

If the wood is Mahogany there is a surcharge of $150

If the wood is Oak there is a surcharge of $125

If the wood is the pine there is no surcharge.

For every drawer in the desk there is a surcharge of $30

The output will be an detail invoice with a final total for the desk.

```
//Declare Global constant integer base price and set it to 200$
Constant Integer basePrice=200
Module Main()
        Declare real length, real width, real area
        Declare real areaCharge
        Declare integer surCharge
        Declare string woodStyle
        Declare integer drawerCharge
        Declare finalTotal
//Prompt user to input length and width
        Display “what is the desired length?”
        Input length
        Display “what is the desired width”
        Input width
//Calculate the surface area
        Set area= length*width
        IF area >750 then
                Display “there is a surcharge of 50$”
                Set areaCharge= 50
        End IF
        Call FindWoodStyle(woodStyle, surCharge)
        Call findDrawerQuantity(drawerCharge)
        Set Finaltotal=basePrice+ areaCharge+surcharge+drawerCharge
        Display “your Total comes to” finalTotal
End Module
End
// Prompt the user to state the desired style of wood
Module FindWoodStyle (String ref woodStyle, surCharge)
```

```
        Declare string ref woodStyle
        Declare integer surCharge
        Display “Would you like mahogany, oak, or pine?”
        Input woodStyle
        IF woodStyle == Mahogany, then
                Set surcharge= 150
        Else
                IF woodStyle== Oak
                        Set surcharge= 125
                Else
                        Set surcharge= 0
                End IF
        End IF
End Module

Module findDrawerQuantity (integer ref drawerCharge)
        Declare integer drawerQuantity
        Display “How many drawers would you like?”
                Input drawerQuantity
                Set drawerCharge=* 30
End Module
```