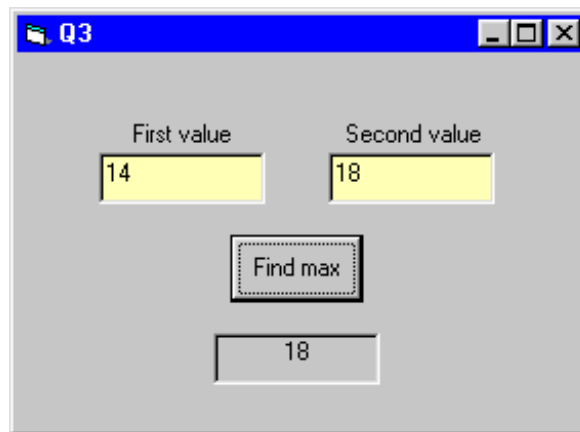


Please answer questions in the space provided. Question point values are shown in parentheses.

1. (15) Indicate whether the following statements are True or False.
 - T or F A variable declared with a Dim statement in the General Declaration section of a form can be used by any procedure also defined within the same form.
 - T or F It is not legal to declare a local variable in a module using the same name as a module-level variable in that module.
 - T or F Global variables are declared using the Public statement within any procedure in a code module.
 - T or F It is not possible to have local variables within a code module.
 - T or F The properties of a control located on a form can only be accessed from code located within that form.
2. (15) Assume that you want to enforce a rule that states that a numeric value entered into a text box must fall within a certain range, e.g., between 0 and 100 inclusive. Would this rule be best handled in a Change, KeyPress, or LostFocus event for the text box? Explain.
3. (16) Write a complete VB function “maxInt” that finds the maximum of two integers. The following screen image shows the results of applying the function:



The click event for the “Find max” command button follows:

```
Private Sub cmdFindMax_Click()  
    Dim max As Integer  
    Dim first As Integer  
    Dim second As Integer  
    first = txtFirst.Text  
    second = txtSecond.Text  
    max = maxInt(first, second) ' write this function  
    lblMax.Caption = max
```

End Sub

4. (12) Assume you have the following four variables:

a = 10
b = 20
c = 5
d = 2

Given these variables, evaluate the following VB expressions:

- a. $a + b / c + d + 9$
b. $b / a * c / d$
c. $(c \text{ Mod } d) * b + b / a$
d. $(11 + b * c) \backslash d$
5. (15) Assume you have a text box that used for a password. You want to replace each character entered with an asterisk. You also want to be able to use the actual characters entered by the user. For example, consider the following screen image:



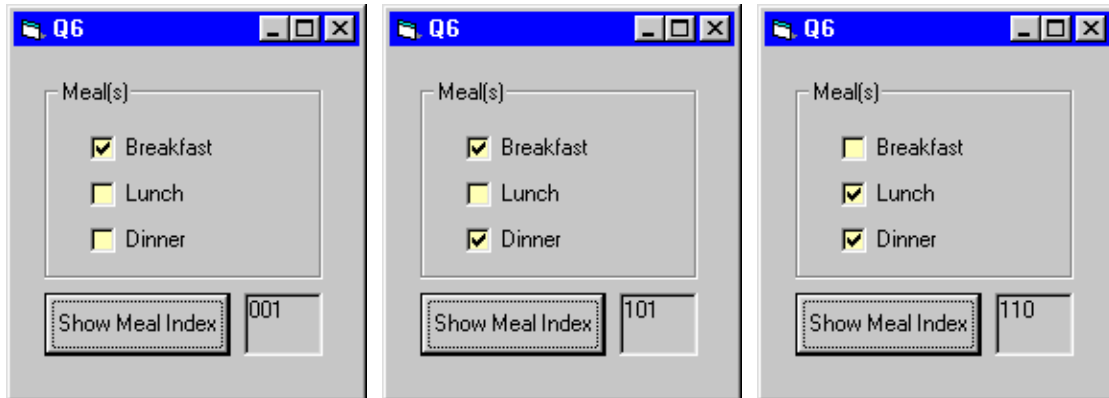
Here the user has entered the password into the text box and then clicked on the “Show Password” command button. The actual password text is displayed in the label located below the button. The code for the command button is:

```
Private Sub cmdShowPwd_Click()  
    lblPassword.Caption = passwordText 'passwordText is a variable  
End Sub
```

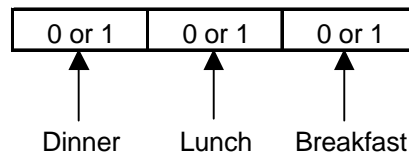
Write the code that manages this text box. The code should allow the use of the Backspace character. For example, the user might have typed “SecretX” above and then the Backspace key (to remove the “X”).

You may NOT use the PasswordChar property of the text box to solve this problem.

6. (15) You have three check boxes that indicate whether a person wants to be served any combination of breakfast, lunch, and dinner. You need to create a “Meal Index” that has three characters (one for each meal) and each character will be either 0 or 1 (no meal or meal). For example, consider the following three screen images:



In constructing the Meal Index, dinner is on the left, lunch in the middle, and breakfast is on the right:



Write the click event for the “Show Meal Index” command button.

```
Private Sub cmdShowMealIndex_Click()  
    'you fill in the details here  
End Sub
```

When writing your code, assume that the check boxes are named `chkBreakfast`, `chkLunch`, and `chkDinner`.

7. (12) You are given the following code:

<pre>Option Explicit Dim a As Integer _____ Public Sub procA(x As Integer, ByVal y As Integer) Dim a As Integer a = 10 x = a y = 55 End Sub _____ Public Sub procB(ByVal b As Integer) a = b b = 100 End Sub _____ Public Sub procC(a As Integer, b As Integer) Dim x As Integer procA a, b x = a procB x End Sub</pre>	<pre>Private Sub cmdQ7_Click() Dim b As Integer a = 100 b = 5 procA a, b Form1.Print a, b procB 200 Form1.Print a, b a = 30 b = 90 procC b, a Form1.Print a, b End Sub</pre>
--	--

Given this code, indicate the output generated by the Form.Print statements when the cmdQ7_Click() event is executed.

1. True
False
False
False
False
2. This is best handled with a LostFocus event. Both the Change and KeyPress events are called on every keystroke. It is difficult to determine if the user input is valid until after the last keystroke has taken place and there is no way to tell that in either a Change or KeyPress event. You can, however, determine that the last keystroke in a textbox has taken place when the user moves focus to another control (which is when the text box's LostFocus event is called).
3. A sample code solution is:

```
Public Function maxInt(ByVal a As Integer, ByVal b As Integer) As Integer  
    If a > b Then  
        maxInt = a  
    Else  
        maxInt = b  
    End If  
End Function
```

4. a. 25
b. 5
c. 22
d. 55
5. A sample code solution is:

```
Dim passwordText As String 'General Declaration  
  
Private Sub txtPassword_KeyPress(KeyAscii As Integer)  
    Select Case KeyAscii  
        Case vbKeyBack  
            If Len(passwordText) = 0 Then Exit Sub  
            passwordText = Left$(passwordText, Len(passwordText) - 1)  
        Case Else  
            passwordText = passwordText + Chr$(KeyAscii)  
            KeyAscii = Asc("*")  
    End Select  
End Sub
```

6. There are two solution alternatives shown below:

Alternative 1:

```
Private Sub cmdShowMealIndex_Click()  
    Dim mealIndex As Integer  
    Dim formattedMealIndex As String  
  
    If chkBreakfast.Value = vbChecked Then  
        mealIndex = 1  
    End If  
  
    If chkLunch.Value = vbChecked Then  
        mealIndex = mealIndex + 10  
    End If  
  
    If chkDinner.Value = vbChecked Then  
        mealIndex = mealIndex + 100  
    End If  
  
    formattedMealIndex = Format$(mealIndex, "000")  
    lblMealIndex.Caption = formattedMealIndex  
End Sub
```

Alternative 2:

```
Private Sub cmdShowMealIndex_Click()  
    lblMealIndex.Caption = Str$(chkDinner.Value) & _  
        Str$(chkLunch.Value) & Str$(chkBreakfast.Value)  
End Sub
```

7. The three Form.Print statements produce the following:

10	5
200	5
10	10