1. Which line of code sets the BackColor property of the label lblColor? Which two events does this occur in?

   ```vbnet
   lblColor.BackColor = RGB(vsbRed, vsbGreen, vsbBlue)
   This occurs in ChangeColors and Form_Load
   ```

2. Strictly speaking, ChangeColors is not an event. It is a procedure called from an event. What other procedure is used in this program?

   ```vbnet
   Redraw
   ```

3. What is the essential difference between the two procedures, Redraw and ChangeColors?

   ```vbnet
   Redraw uses a parameter variable (the color variable) and ChangeColors doesn't have any parameter variables.
   ```

4. Which line of code declares the parameter variable in this program?

   ```vbnet
   Sub Redraw(Color as Long)
   ```

5. This program uses a control array for the pattern of shapes. Which other controls in this project could use a control array?

   The three vertical scroll bars.

6. Try recreating the vertical scroll bars as a control array. Does it simplify the code? **Yes - a little bit.**

   ```vbnet
   Rename the Vertical Scroll Bars as vsbColor(0) to vsbColor(2). Set their index values to 0,1 and 2.
   
   Now you only need one event rather than three (the vsbColor_change event).
   
   ChangeColors is still called. Change the following line in the ChangeColors procedure:
   
   lblColor.BackColor = RGB(vsbRed, vsbGreen, vsbBlue)
   
   to:
   
   lblColor.BackColor = RGB(vsbColor(0), vsbColor(1), vsbColor(2))
   ```

7. Add option buttons for three more colours - Pink, Brown and Grey. Where do you get the values for these colours and what are they?

   Go to the BackColor property of any control, or the Form itself. Set the colour by using the palette selector. The value you are looking for is there in the BackColor property. One possible set of values (depending on the exact shade selected) is:

   ```vbnet
   Pink &H008080FF&
   Brown &H00004080&
   Grey &H00C0C0C0&
   ```

8. What is the difference between the SmallChange and the LargeChange Property? Try changing these values to 5 and 25 respectively.

   ```vbnet
   Clicking on the scroll bar arrows changes the value by the amount of the SmallChange.
   
   Clicking on the bar itself changes the value by the amount of the LargeChange.
   ```
9. The RGB function returns a colour based on the mixture of the 3 primary colours, Red, Green and Blue. What are the common colours represented by the following settings for the RGB function? (Hint: use the Vertical Scroll Bars to test).

<table>
<thead>
<tr>
<th>RGB Colour Settings</th>
<th>Colour Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RGB( 0, 0, 0 )</td>
<td>Black</td>
</tr>
<tr>
<td>RGB( 255, 255, 255 )</td>
<td>White</td>
</tr>
<tr>
<td>RGB( 255, 255, 0 )</td>
<td>Yellow</td>
</tr>
<tr>
<td>RGB( 0, 255, 255 )</td>
<td>Light Blue</td>
</tr>
<tr>
<td>RGB( 255, 0, 255 )</td>
<td>Purple</td>
</tr>
</tbody>
</table>

10. Modify the project so that there are 40 shapes in the pattern. Modify the code in only one place to make the new shapes function.

   Select the frame and all the buttons. Copy and paste.
   Modify the code to 'Const NumButtons = 40'

11. Modify the array so that the shapes are no longer rectangles (e.g. change to circles or ovals etc).

   Go to the Shape property and change to Square, Oval, Circle, Rounded Square or Rounded Rectangle.

12. Modify the BorderStyle and width properties of the shapes. What effect does this have?

    This affects the type of border e.g. dotted/dashed and the thickness of the border.

13. What is the difference between FillColor and BackColor?

    FillColor is part of the FillStyle. The FillColor is superimposed over the top of the BackColor. BackColor is in the background. It will only be visible if the FillStyle is transparent.

14. Comment out the Randomize statement in the CmdRandom_Click event.
    a. What effect does this have?
    b. Test and prove this by restarting the program five times and recording the first five colour values randomly generated (use MsgBox Cell(i).BackColor in the cmdRandom_Click event to capture the values).

    a. If randomize is not used then the same sequence of 'random' number is always generated. i.e. it is not truly random.
    b. Randomize always reinitialises the random number 'seed value'.

15. There is a design flaw in this program. If an option button for a preset colour is clicked on (e.g. Red), the colour of the label, lblColor, doesn't change. In addition, the vertical scroll bars for RGB do not reflect the colour actually displayed in the pattern. How could this be fixed?

    In the optRed_click event, add the line:
    LblColor.BackColor = vbRed

    Also, add the following three lines to alter the vertical scroll bars:
    VsbRed.value = 255
    VsbBlue.value = 0
    VsbGreen.value = 0

    The other option buttons will also need modifying.