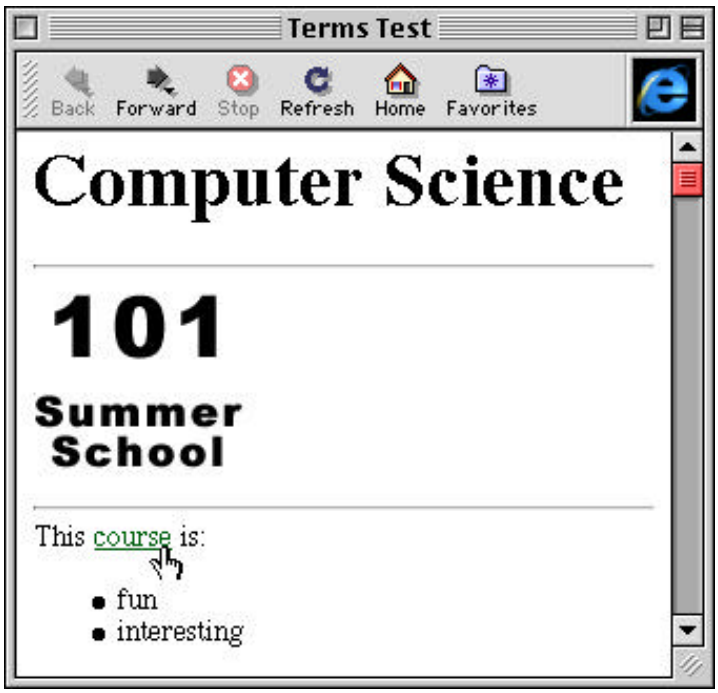
415.101AC 2000 Test Solutions

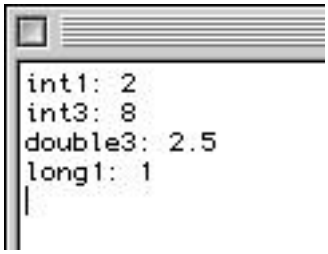
Q.1 – (5 marks)



Q.2 – (5 marks)

```
 public class ApplicEsQ2 {
    public static void main(String args[]) {
    int int1, int2;
    System.out.println("Numbers: ");
    int1 = Keyboard.readInt();
    int2 = Keyboard.readInt();
    if (int1 > 62){
        System.out.println("OK");
        int1 = int1 - 3;
   }
    else {
        int1 = int1 + 10;
        if (int1 > int2)
            System.out.println(int1 + ", "+ int2);
        else {
            int1 = int1 - 10;
            System.out.println(int1 + ", "+ int2);
        }
    }
 }
}
```

Q.3 – (8 marks)



Q.4 – (8 marks)

```
a is: 200
x is: 20
a is: 200
b is: false
c is: 201.5
```

Q.5 – (8 marks)

```
    public String shortThenLong(String s1, String s2) {
        if (s1.length() < s2.length())
            return s1.concat(s2);
        else
            return s2.concat(s1);
    }
```

Q.6 – (4 marks)

false

false

Q.7 – (12 marks)

```
import java.awt.*;
import java.applet.*;
import java.awt.event.*;
public class Q7 extends Applet implements ActionListener {
      /** width and height of oval */
 static final int SIZE = 30;
      /** applet width */
 static final int APP_WIDTH = 300;
      /** TextFields to hold x,y position of circle */
 private TextField xPosT, yPosT;
      /** Buttons for drawing circle from Applet left or right */
 private Button fromLeftB, fromRightB;
      /** true if circle is drawn from left of applet */
 private boolean fromLeft;
      /** x,y position of the circle*/
 private int xPos, yPos;

 public void init() {
      xPosT = new TextField(5);   //set up TextFields and Buttons
      add(xPosT);
      yPosT = new TextField(5);
      add(yPosT);
      fromLeftB = new Button("From Left");
      fromLeftB.addActionListener(this);
      add(fromLeftB);
      fromRightB = new Button("From Right");
      fromRightB.addActionListener(this);
      add(fromRightB);
      xPos = 100;
      yPos = 100;
      fromLeft = false;
```

```
  } //end of init() method
 public void actionPerformed(ActionEvent e){
     if (e.getSource() == fromLeftB){
          fromLeft = true;
     }
     else {
          fromLeft = false;
     }
     repaint();
}//end of actionPerformed() method
public void paint(Graphics g){
int x, y;
     x = Integer.parseInt(xPosT.getText());
     y = Integer.parseInt(yPosT.getText());

     if (fromLeft){
          g.setColor(Color.blue);
          g.fillOval(x,y,SIZE,SIZE);
     }
     else {
          x = APP_WIDTH - x - SIZE;
          g.setColor(Color.red);
          g.fillOval(x,y,SIZE,SIZE);
     }
 }//end of paint() method
}//end of Applet
```

Q.8 – (7 marks)

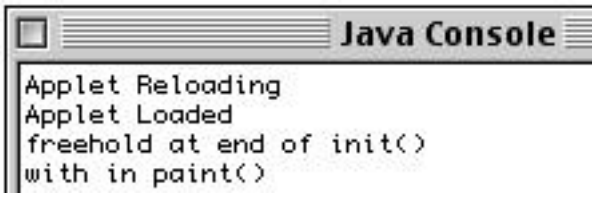
```
public class Q8{
        public static void main(String args[]) {
                int nItems;  // number of items
                int totalPaid;      // total paid by user
                int perItemC;       //cost per item
                int totalC;         //total cost of items
                int change;         //change if there is any
                int need;           //amount needed if user has not paid enou

                System.out.print("Number of Items required: ");
                nItems = Keyboard.readInt();
                System.out.print("Cost per Item: $");
                perItemC = Keyboard.readInt();
                System.out.print("Total paid in: $");
                totalPaid = Keyboard.readInt();

                totalC = nItems * perItemC;   //work out total cost
                if (totalPaid == totalC){
                        System.out.println("Thank you.");
                        System.out.println("No change.");
                }
```

```
            else if (totalPaid > totalC){
                  change = totalG - totalC;
                  if (change > 30)
                        System.out.println("Wait for cheque: value $"+ change);
                  else
                        System.out.println("Change: $"+change);
            }
            else {
                  need = totalC - totalPaid;
                  System.out.println("You have not paid enough!");
                  System.out.println("Insert $"+need + " more");
            }
            System.out.println();
      }
}
```

Q.9 – (5 marks)



Q.10 – (10 marks)

```
import java.awt.*;

public class MyCircle {

      int x, y, radius;
      boolean filled;

      public MyCircle(int initX, int initY, int initRadius) {
            x = initX;
            y = initY;
            radius = initRadius;
      }
      public void changeSize(int amount) {
            radius = radius + amount;
      }
      public void setFill(boolean state) {
            filled = state;
      }
      public void draw(Graphics g) {
            if (filled)
                  g.fillOval(x-radius, y-radius, 2*radius, 2*radius);
            else
                  g.drawOval(x-radius, y-radius, 2*radius, 2*radius)

      }
}//end of Applet
```