1. RandomDrops

Write a GraphicsProgram named RandomDrops that paints 100 filled circles at random locations on the screen. The size of each circle is also determined randomly. You need to define and implement a method that draws a filled circle. This method should be called several times within a loop. The method should take the position and the radius of the circle as arguments. A sample output of the program is shown on the right hand side.

```java
import acm.program.*;
import acm.graphics.*;

public class RandomDrops extends GraphicsProgram {
    private static final int SCREEN_WIDTH = 800;
    private static final int SCREEN_HEIGHT = 500;
    private static final int MAX_BALL_SIZE = 20;

    public void init() {
        setSize(SCREEN_WIDTH, SCREEN_HEIGHT);
    }

    public void run() {
        /* complete the rest of the code here */
    }

    /* draws a filled circle on the screen
     * x: x-coordinate of the center of the circle
     * y: y-coordinate of the center of the circle
     * r: the radius of the circle
     */
    public void drawDrop(int x, int y, int r) {
        /* complete the rest of the code here */
    }
}
```

2. Colored RandomDrops

Modify the program RandomDrops so that the color of each drop is assigned randomly as green, blue or red. For each drop to be drawn, obtain a random integer between 0 and 2. If the number is 0, set the color of the drop as green. If the number is 1, set the color of the drop as blue. Otherwise (the number should have the value 2), set the color of the drop as red. A sample output of the program is shown on the right hand side.
3. Binary to Decimal Format Converter

Write a method `getDecimal(n)` that converts a number in binary representation to decimal format. The method takes an integer as argument, which represents a number in binary format (contains only 1s and 0s). It returns another integer that has the decimal value of this number. The output should look like the right hand side after you complete the rest of the Java program below.

```java
import acm.program.*;

public class NumberFormatConverter extends ConsoleProgram {
    public void run() {
        int binaryNumber = readInt("Enter a binary number: ");
        int decimalNumber = getDecimal(binaryNumber);
        println("The number in decimal format is "+ decimalNumber);
    }
    public int getDecimal(int n) {
        /* complete the rest of the code here */
    }
}
```

4. Stairs

Write a method `printRowOfStars(n)` that prints a row of '*' characters. The method takes an integer argument that specifies the number of '*' characters to be printed. The output should look like the right hand side after you complete the rest of the Java program below.

```java
import acm.program.*;

public class Stairs extends ConsoleProgram {
    public void run() {
        for (int i = 1; i <= 10; i++) {
            printRowOfStars(i);
        }
    }
    public void printRowOfStars(int n) {
        /* complete the rest of the code here */
    }
}
```

Modify the program without modifying the `printRowOfStars` method to obtain different output patterns as shown below.