Complex Loops, Scope, & Class Constant Warm Up II:

Review this Class and answer the five questions in the comments. Code Line numbers are shown at the left.

```
 1 public class ScalingLoopsWarmUp {
 2 /* WarmUp Exercise on Scope & Scaling Nested Loops
 3    Review this code and answer the questions below
 4    Line Numbers are shown at the left for your reference
 5 */
 6    public static final int SIZE = 5;
 7    public static void main(String[] args) {
 8       //size = 10;
 9       scopeCheck();
10       System.out.println("\n");  // How many blank lines?
11       scalingDiagonal () ;
12    }
13    /* 1) What is the Scope of the variables in the Class Constant above and
14             method below?  Specify line number from & to for:
15                SIZE, keyValue, i, and j
16       2) What does this Methods print?? */
17    public static void scopeCheck() {
18       int keyValue = 42;
19       for (int i = 1; i <= 4; i++) {
20          for (int j = 1; j <= i; j++) {
21             System.out.print("*" + keyValue);
22          }
23          System.out.println();
24       }
25    }
26
27    /* 2) What is Pseudocode to print this ASCII Image at the left?
28       3) What would be the code to print it?
29
30    aaaaB
31    aaaBc
32    aaBcc                              aaB
33    aBccc                              aBc
34    Bcccc  (SIZE = 5)                  Bcc  (SIZE = 3)
35
36       4 & 5) If the ASCII Image above at the left is of SIZE = 5 and the
37          one on the right is SIZE = 3, what two changes do you need to make
38          to your program's image scale with SIZE?                          */
39    //Starter Code
40    public static void scalingDiagonal() {
41       for (int line = 1; line <= 5; line++) {
42          // Insert your lines here
43          System.out.println();
44       }
45    }
46 }
```

Complex Loops, Scope, & Class Constant Warm Up II: Solutions

1) What is the Scope of the variables in the Class Constant above and
   method below? Specify line number from & to for: SIZE, keyValue, i, and j

SIZE from 6 to 46
keyValue from 18 to 24
i from 19 to 22
j from 20 to 22
Key: within the curly braces where they were created.

2) What does this Methods print?? */
    *42
    *42*42
    *42*42*42
    *42*42*42*42

2) What is Pseudocode to print this ASCII Image at the left?

```
aaaaB
aaaBc
aaBcc                          aaB
aBccc                          aBc
Bcccc  (SIZE = 5)              Bcc  (SIZE = 3)
```

```
for (each of 5 lines){
     print decreasing a's starting at 4 decreasing by 1
     print one B
     print increasing c's starting at 1 increasing by 1
     pring a new line
}
```

3) What would be the code to print it?

```
public static void scalingDiagonal() {
   for (int line = 1; line <= 5; line++) {  // Prints SIZE lines
      // Each line has decreasing a's, one B, and increasing c's
      for (int i = 1; i<= 5 - line; i++){
         System.out.print("a");  // decresing "a"
      }
      System.out.print("B"); // the single "B" for each line
      for (int i = 1; i<= line - 1; i++){
         System.out.print("c");  // increasign "c"
      }
      System.out.println();  // prints the new line
   }
}
```

4 & 5) If the ASCII Image above at the left is of SIZE = 5 and the one on the right is SIZE = 3, what two changes do you need to make to your program's image scale with SIZE?

```
public static void scalingDiagonal() {
   for (int line = 1; line <= SIZE; line++) {  // Prints SIZE lines
      // Each line has decreasing a's, one B, and increasing c's
      for (int i = 1; i<= SIZE - line; i++){
         System.out.print("a");  // decresing "a"
      }
      System.out.print("B"); // the single "B" for each line
      for (int i = 1; i<= line - 1; i++){
         System.out.print("c");  // increasign "c"
      }
      System.out.println();  // prints the new line
   }
}
```