

CIS1068, Program Design and Abstraction

```
public class <class Name> {
public static <type><name> ( <type><parameter 1>, <type><parameter 2> ... ) {
    <statements>
}
```

...

```
<name> ( arg1, arg2, ... );
```

...

```
}
```

```
public class <another class> {
<class Name>.<name> ( arg1, arg2, ... );
}
```

1. Rewrite the following program to use parameterized methods:

```
// Draws triangular figures of stars.
public class Loops {
    public static void main(String[] args) {
        for (int i = 1; i <= 5; i++) {
            for (int j = 1; j <= i - 1; j++) {
                System.out.print(" ");
            }
            for (int j = 1; j <= 10 - 2 * i + 1; j++) {
                System.out.print("*");
            }
            System.out.println();
        }

        for (int i = 1; i <= 12; i++) {
            for (int j = 1; j <= i - 1; j++) {
                System.out.print(" ");
            }
            for (int j = 1; j <= 25 - 2 * i; j++) {
                System.out.print("*");
            }
            System.out.println();
        }
    }
}
```

```
public class Loops {
    public static void main(String[] args) {
```

```
} // end of class
```

2. Complete the following program that prompts the user for a maximum integer and prints out a list of all prime numbers up to that maximum. Here is an example log of execution:

Maximum number? **50**

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47

15 total primes

```
import java.util.*;
public class PrintPrimes {
    public static void main(String[] args) {
        Scanner console = new Scanner(System.in);
        printPrimes(getNumber(console)); // what to do first?
    }

    public static int countFactors(int num) {
        int count = 0;
        for (int i = 1; i <= num; i++) {
            if (num % i == 0) {
                count++;
            }
        }

        return count;
    }

    public static int getNumber(Scanner console) {
        System.out.print("Maximum number? ");
        return console.nextInt(); // what brings back to the caller?
    }

    // Your development starts here
```

```
} // end of class PrintPrimes
```

3. Complete the program below that reverses the order of the elements in the provided array a.

```
import java.util.Arrays;

public class ReverseArray{
public static void main(String [] args){
int [] a = {1, 2, 3};
System.out.println(Arrays.toString(a));
reverseArray(a);
System.out.println(Arrays.toString(a));
}
// Your development starts here
```

```
} // end of class ReverseArray
```