Exercises: Methods

Code Writing

For each of the following questions, consider 1) what the method should be called, 2) what parameters it should have, and 3) what value it should return.

1. Write a method to find and return the max of two int numbers. Return the number if they are the same. Do not use the max method.

2. Write a method to convert a String into a character array. Do not use the toCharArray method.

3. Write a method to generate the substring of a String that has parameters for the String itself and two int values for the beginning and end of the substring, and works similar to the Java-provided substring method. Do not use the substring method.
4. Write a method to determine whether or not two arrays of int values are equal, where equality is defined by the two arrays being of the same length and having the same values in the same order.

5. Write a method to print the contents of an array of String values to the console.
Code Reading

6. Given the methods on the **Method Worksheet** starting on page 5, what is the output of the following program?

```java
public class MethodChallenge01 {
    public static void main(String[] args) {
        purple(2);
        b2(1, true);
        System.out.println();
        a4(true);
        c10("cs", 5);
        b2(1, false);
    }
}
```

7. Given the methods on the **Method Worksheet** starting on page 5, what is the output of the following program?

```java
public class MethodChallenge02 {
    public static void main(String[] args) {
        c10("cs", 5);
        f7(false);
        a4(false);
        sb(10);
        b2(2, false);
    }
}
```
8. Given the methods on the Method Worksheet starting on page 5, what is the output of the following program?

```java
public class MethodChallenge03 {
    public static void main(String[] args) {
        apb(false);
        sb(20);
        f7(false);
        ss(17, 2);
        b2(1, false);
    }
}
```

9. Given the methods on the Method Worksheet starting on page 5, what is the output of the following program?

```java
public class MethodChallenge04 {
    public static void main(String[] args) {
        ss(-7, 24);
        System.out.print(" ");
        apb(true);
        purple(4);
        b2(10, true);
    }
}
```
Method Worksheet

```java
public static int f1( int i ) {
    int r;
    for (int x = i; x > 1; --x) {
        r *= x;
    }
    return r;
}
```

```java
public static void sb( int p ) {
    String x;
    if (p % 5 == 0) {
        x = "sauce";
    } else {
        x = "butter";
    }
    System.out.print(x);
}
```

```java
public static void ss( int x, int y ) {
    String k = "sour";
    if (x + y < 20) {
        k = "sweet";
    }
    System.out.print(k);
}
```

```java
public static void a4( boolean c ) {
    String b = "awesome";
    if (c) {
        b = b + ",";
    }
    System.out.print(b + " ");
}
```

```java
public static void c10( String p, int n ) {
    System.out.print(p.toUpperCase() + f1(n));
}
```

```java
public static void apb( boolean p ) {
    String s = "apple";
    if (p) {
        s = s + 's';
    }
    System.out.print(s);
}
```

More methods on next page
```java
public static void f7( boolean i ) {
    if (i) {
        System.out.print(" are ");
    } else {
        System.out.print(" is ");
    }
}

public static void b2( int g, boolean y ) {
    String m = "";
    for (int i = g; i >= 1; i--) {
        if (y) {
            m = m + "?";
        } else {
            m = m + "!";
        }
    }
    System.out.print(m);
}

public static void purple( int r ) {
    DecimalFormat df = new DecimalFormat( g42(r) );
    System.out.print(" " + df.format(Math.PI));
}

public static String g42( int i ) {
    String retval = "0.";
    for (int d = 0; d < i; ++d) {
        retval = retval + "0";
    }
    return retval;
}
```