1) Which of the following is NOT true of a strongly-typed language? (circle one)  
   a) Every variable must have a declared type.  
   b) The value of every variable must conform to its declared type.  
   c) Every type must be a primitive type.  
   d) Strong typing helps compilers to catch certain kinds of errors.  
   e) Strong typing helps compilers to generate more efficient code.

2) Suppose that the following statements have been executed:
   ```java
   String x = "Hello";
   String y = "Hello";
   ```

After execution of the above statements, which of the following expressions are guaranteed to return the value `true`? (circle all that apply):

   - `x = y`  
   - `x = Hello`  
   - `x = "Hello"`  
   - `x == "Hello"`  
   - `x == y`  
   - `x.equals(y)`

3) Suppose that the following statements have been executed:
   ```java
   int x = 7;
   double y = 5.0;
   ```

Which of the following is an example of a widening conversion? (circle all that apply):

   - `x = y;`  
   - `y = x;`  
   - `y = 157.6;`  
   - `x = 9;`  
   - `y = 2;`

4) Suppose the following statement has been executed:
   ```java
   int x = 3, y = 7, z = 2;
   ```

What is the value of this expression? `x + y / z`
5) Suppose the following statement has been executed:
   ```java
   int x = 5, y = 7;
   ```
   After evaluating this expression: ```--x + y--```
   a) What is the value of ```x```?
   b) What is the value of ```y```?
   c) What is the value of the expression?
   
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

6) What is printed by the following code fragment?
   ```java
   int n = 10;
   if (n < 20)
       System.out.println("n is less than 20");
   else if (n < 30)
       System.out.println("n is less than 30");
   ```
   
   n is less than 20

7) What is printed by the following code fragment?
   ```java
   int i = 8;
   while (i < 100) {
       System.out.println(i);
       i *= 2;
   }
   ```
   
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8) In the following code fragment, draw a circle around the scope of variable ```x```.
   ```java
   int a = 5, b = 7;
   if (a > b) {
       int x = 0;
       x += a;
       System.out.println(x);
   }
   else {
       int y = 0;
       y += b;
       System.out.println(y);
   }
   ```
9) Write a program that prints all the positive integers less than 100 that are divisible by 7, one per line. Complete the skeleton program below (no comment needed.)

```java
class Sevens {
    public static void main(String[] args) {
        for (int i = 1; i < 100; i++)
            if (i % 7 == 0)
                System.out.println(i);
    }
}
```

10) Write a program that prompts the user for input, then reads a single integer n and prints a square box consisting of n rows, each containing n *'s. Your program must work for any positive integer. Complete the skeleton program shown below (no comment needed.) The following illustrates the desired dialog for n = 3:

```
Enter the size of your square
3
***
***
***
```

```java
import java.util.*;
class Square {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        System.out.println("Enter the size of your square");
        int n = scan.nextInt();
        for (int i = 0; i < n; i++) {
            for (int j = 0; j < n; j++)
                System.out.print("*");
            System.out.println();
        }
    }
}
```