AP/Honors Java
Unit 5 Practice Test

Name-

Period-

True/False

1. An if statement can be nested inside of a `for` loop.
2. A `while` loop is guaranteed to iterate at least one time.
3. A `for` loop's control variable (e.g. `i`) can be declared in such a way that its scope is limited to the loop.
4. A `break` statement can be used to immediately exit out of a `for` loop or a `while` loop.
5. `i++` is often used as the initializing expression in a `while` loop.
6. A loop invariant must be true even just after the last iteration of the loop when the loop's control expression is false.
7. Flag variables often use the `boolean` data type.
8. The `randomInt` method of the `Math` class is a static method.
9. A `for` loop is considered to be an indefinite loop.
10. An initializing expression is required in a `for` loop. Otherwise, a compile error will occur.

Fill in the Blank

1. A _____ variable is often used to control when a `while` loop ends.

2. A loop _____ is always true at the top of a loop.

Write the Code

1. Write an assignment statement that stores a pseudorandom integer between or including 1 and 10 into the variable `num`.

2. Write an assignment statement that stores a pseudorandom **floating-point value** between 0 inclusive and 15 exclusive into the variable `num`.

3. Write a `for` loop that displays the even integer values from 2 to 8 inclusive **on a single line** of output with spaces in between.

4. Write a code segment that uses a `for` loop to efficiently display all numbers between 10 and 30 inclusive that are multiples of 3 or 5 on separate lines.

5. On the back of this paper, write a method named `fourSidedDice` that returns the integers 1, 2, 3, and 4 with equal probability.

```
public static int fourSidedDice()
{
```

6. On the back of this paper, write double-nested `for` loops that display the following arrangement of asterisks. You will receive no credit if you do not use double-nested loops.

```
   *
  **
 ***
****
```