

1. Write an expression that stores a random integer from -4 to 7 inclusive into an int variable.

```
if ( x+y>7 || z>8 )
```

2. When would short circuit evaluation occur for this statement?

```
if ( x+y>7 && z>8 )
```

3. When would short circuit evaluation occur for this statement?

4. What is output?

```
int x = 1;
if( x == 3 )
    System.out.println("C");
    System.out.println("A");
System.out.println("T");
```

5. What is output?

```
System.out.println(Math.pow(3,4));
```

6. Simplify:

```
!( x!=5 || x>y )
```

7. What is output?

```
System.out.println(61%3);
```

8. Complete this truth table:

A	B		!A B
T	T		
T	F		
F	T		
F	F		

9. Finish this code below to print "cold" if temp is less than 68, "just right" if temp is from 68 to 75 inclusive, and "hot" if temp is greater than 75.

```
int temp = /* initialized with valid data*/;
```

10. Write code to compare two String variables, **pwd1** and **pwd2**. Print "same" if they are equal and nothing if they are not equal.

11. What is output by the following?

```
String c = new String("WCHS");
String d = new String("WCHS");
System.out.print(c==d);
```

12. The following code gets a String from the user and store it in **temp**. Write code to check if the String **temp** is in the variable **phrase**. If it is present, print "found", if not, print "not found."

```
String phrase = "apple";
Scanner scan = new Scanner(System.in);
System.out.println("Enter a word: ");
String temp = scan.nextLine();
```

13. What is output?

```
int x = 31 % 8;
if ( x > 10)
    System.out.println(1);
else if ( x > 8 )
    System.out.println(2);
else if ( x > 6 )
    System.out.println(3);
else if ( x > 4 )
    System.out.println(4);
else
    System.out.println(5);
```

14. Write the method `thirteenCheck` which accepts two integers as inputs and returns true if either of them is 13 or if their sum or difference is equal to 13 and returns false otherwise.

```
public boolean thirteenCheck(int a, int b) {

}

}
```

15. What is printed by the following?

```
String temp = "mars lander";
System.out.println(temp.length());
```

The last question uses the following class:

```
public class Frog
{
    private int location;

    public Frog() {
        //implementation not shown }

    public void hop(int n) {
        //moves Frog forward n spaces
        //implementation not shown }

    public int getLocation() {
        //returns Frog location
        //implementation not shown }
}
```

16. Consider the following code, which sets up a race between two Frogs, where each Frog hops forward by a random integer value from 1 to 10.

```
Frog a = new Frog();
Frog b = new Frog();
a.hop((int) (Math.random()*10)+1);
b.hop((int) (Math.random()*10)+1);
```

Write code to check and report which Frog wins the race or if it is a tie.