Practice Questions, Set 1:
Flow Control, Looping, Basic Java

1. Show how this sequence can be rewritten using the ?: operator.

   ```java
   if(x < 0) y = 10;
   else y = 20;
   ```

2. Write a program that reads characters from the keyboard until a period is received. Have the program count the number of spaces. Report the total at the end of the program.

3. Show the for statement for a loop that counts from 1000 to 0 by –2.

4. What does the following code fragment print?

   ```java
   for(int i = 0; i<10; i++) {
       System.out.print(i + " ");
       if((i%2) == 0) continue;
       System.out.println();
   }
   ```

5. The ASCII lowercase letters are separated from the uppercase letters by 32. Thus, to convert a lowercase letter to uppercase, subtract 32 from it. Use this information to write a program that reads characters from the keyboard. Have it convert all lowercase letters to uppercase, and all uppercase letters to lowercase, displaying the result. Make no changes to any other character. Have the program stop when the user enters a period. At the end, have the program display the number of case changes that have taken place.

6. What is an infinite loop?

7. Show how a short-circuit AND can be used to prevent a divide-by-zero error.

8. Write a program that finds all of the prime numbers between 2 and 100.

9. Given this output,

   ```
   One
   Two
   Three
   ```

   show the (single) println( ) statement that produced it.