

SE1011: Exam 1 Name:

This is a closed-book, closed-computer, etc. exam. You may use one 8.5"x11" sheet of notes, which you will turn in with your exam. Review all questions before you get started. Use the page at the end of the exam for extra work. The exam is printed double-sided. Show all work.

1. (10 points (pts.)) For each item, write "yes" if the code compiles. If it does not compile, fix it.

The type and contents of each variable should be the same as the broken code.

- a. `long x = 5;`
`int y = x;`
 - b. `float f = 5.3;`
`double d = f;`
 - c. `String str = "A";`
`char c = str;`
 - d. `double d = 9.6;`
2. (10 pts.) Suppose that `c` has a value of `false`. Does it matter what values `a` and `b` have, or will this expression always have the same value? Support your answer.

`a || b && c`

3. (5 pts.) Write what will be displayed if the following line is run:

`System.out.println(15 % 2 - 2 % 15);`

4. (5 pts.) How is the compiler's role different than the Java Virtual Machine's role?

5. (5 pts.) Consider Dr. Hasker's instructions for writing a while loop. **Explain** why the second step finds the opposite form of the exit condition found in the first step.

6. (10 pts.) Consider the following program:

```
public static void main(String[] args) {  
    Scanner in = new Scanner(System.in);  
    System.out.println("Please enter a word.");  
    System.out.println("You entered a " + word.length() + " letter word");  
}
```

What will be displayed if Exam is entered by the user?

7. (20 pts.) [Console input/output (IO)] Complete the following program that asks a user to enter a word. The program must display (to the console) "winner" fifty times. Use `System.out.println(...)`; to print to the console.

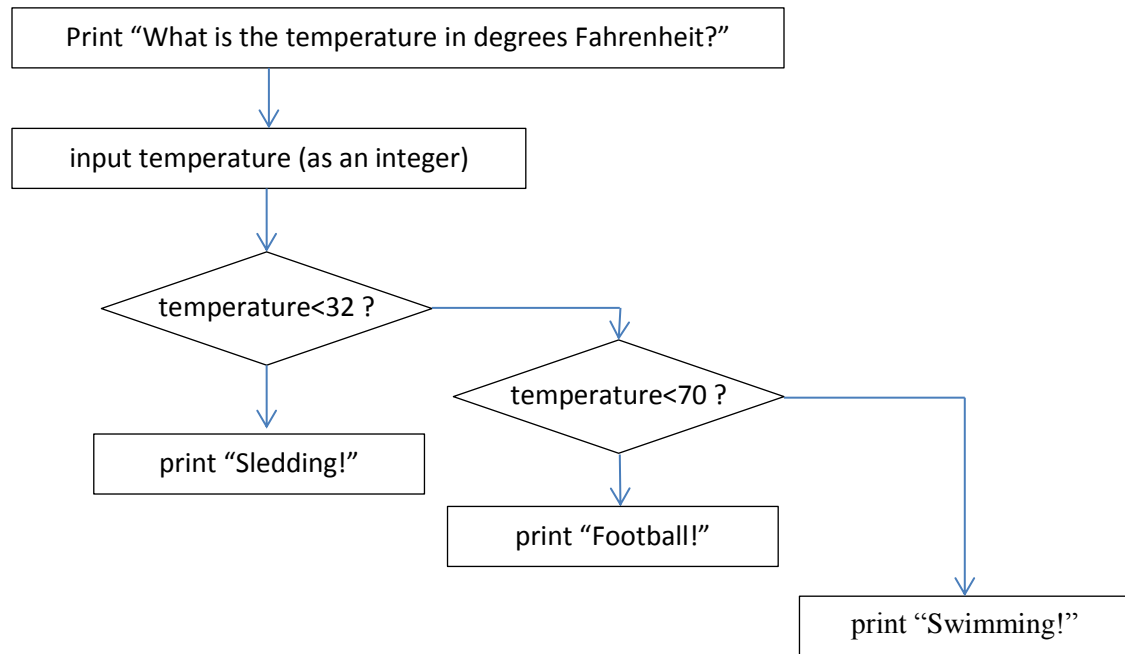
```
import java.util.Scanner;
public class Exam {
    public static void main(String[] ignored) {
        Scanner in = new Scanner(System.in);
```

```
    }
}
```

You may use this space for flowchart, pseudocode, example input output, etc.

8. (20 points) Write **low-level pseudocode** that asks a user to enter an integer and prints a list of all the numbers that divide evenly into the integer entered by the user. For example, if the user enters 12, the program should display 1 2 3 4 6 12. It can also display 12 6 4 3 2 1. (Low-level pseudocode should have roughly one line for each statement in the Java program. In other words, “Print all the numbers that evenly divide 12” is not an appropriate low-level pseudocode representation. You do not need to follow the exact notation used in class, but you should indent your code correctly and use the correct names for any decision or looping structures.)

9. (15 pts.) Translate the following flow chart to Java code. Use `JOptionPane.showMessageDialog(...)` for the output instead of printing to the console. Use `Integer.parseInt(...)` to convert from a `String` to an `integer`.



```
import javax.swing.JOptionPane;

class Exam {
    public static void main(String[] ignored) {
        String temperatureString = JOptionPane.showInputDialog(null,
            "What is the temperature in degrees Fahrenheit?");

        }
}
```

You may use this space for extra work. Indicate the problem you are working on.