
Show all of your work clearly in the space provided or on the additional page at the end of the exam. **read each problem carefully**. Note that the exam is double sided.

1. (5 points) Describe the contents of a source (.java) file.

2. (5 points) Describe the contents of a class (.class) file.

3. (10 points) Give an example of where typecasting is necessary.

4. (5 points) What does the compiler do?

5. (5 points) How do the `while` and `do-while` loop differ?

6. (10 points) Consider the following program:

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

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

7. (20 points) [Console input] Complete the following code that asks the user to enter a word. If the word has an odd number of letters, the program must display (to the console) “winner” fifty times. If the word has an even number of letters, the program must display (to the console) “loser” one time.

```
import java.util.Scanner;
```

```
public class Exam {
```

```
    public static void main(String [] args) {
```

8. (20 points) [GUI Input] Complete the following program that asks the user to enter an integer and displays one pop-up box with a list of all the numbers that divide evenly into the integer entered by the user. Input/Output should be handled with dialog boxes.

For example, if the user enters **12**, the program should display **1 2 3 4 6 12**.

```
import javax.swing.JOptionPane;  
  
public class Exam {  
    public static void main(String [] args) {
```

9. (20 points) Given three `ints`, `a` `b` `c`, set `a` equal to `-72` if `b` is greater than `a`, and `c` is greater than `b`. However, if `b` is `3`, then `b` does not need to be greater than `a`.



Additional space — indentify which problem your work is associated with.