

PS 1: Part I

Problem 1: Java programming basics

1-1)

```
/*
 * Problem1.java
 *
 * A program with lots of syntax errors!
 */

import java.util.*;

public class Problem1{

    /*
     * This static method should take an integer x and return:
     *     x + 1 if x is even
     *     the unchanged value of x when x is odd
     */
    public static int makeOdd( int x)
    {
        if( x % 2 == 0) // if even
        {
            return x+1;
        }
        else{ // if odd
            return x;
        }

    }

    public static void main(String[] args)
    {
        Scanner console = new Scanner(System.in);

        System.out.println("Enter an integer x: ");
        int x = console.nextInt();

        System.out.println("makeOdd(x) = " + makeOdd(x));

        console.close();
    }
}
```

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

1-2)

- a) 14.0
- b) "10d"
- c) 0
- d) 0.4
- e) 0.4
- f) 8.0
- g) 2.0
- h) 2.5
- i) "33"
- j) "123"

Problem 2: Conditional execution

2-1)

a) diamond, pearl, done

b) ruby, pearl, done

c) diamond, pearl, done

d) silver, done

e) penny, nickel, done

f) diamond, pearl, done

2-2)

"Dime" and "copper", they are never reached because the conditional blocks that come before them make them impossible to reach since that same condition will be caught before it reaches that block, which will cause the program to go somewhere else.

Problem 3: Static methods

3-1

variables that belong to main()

x	y
6	3
6	1
4	1

variables that belong to compute()

x	y
1	9
3	7
2	8

output (the lines printed by the program)

6 3

1 9

6 1

3 7

4 1

2 8

4 1

3-2)

```
public static double triArea(double base, double height){  
    double area = 0.5* base* height;  
    return area;  
}
```

Problem 4: Loops

4-1)

```
for ( ; ; ) {  
    System.out.println("I feel loopy!");  
}
```

```
public static void print42(){  
    for (int i = 0; i <= 42; i++) {  
        System.out.println("I feel loopy!");  
    }  
}
```

4-2)

```
public static void mulFive(int n) {  
    for (int mul = 5; mul <= n; mul += 5) {  
        System.out.println(mul);  
    }  
}
```

```
public static void mulFive(int n) { //example  
    // for (int mul = 5; mul <= n; mul += 5) {  
    //     System.out.println(mul);  
    // }  
  
    while(n >= 5){  
        System.out.println(n);  
        n -= 5;  
    }  
}
```

```
}
```

4-3)

```
for (int i = 0; i < 3; i++) {  
    for (int j = 2; j >= 0; j--) {  
        System.out.println(i + " " + j);  
    }  
    System.out.println("--");  
}
```

```
public static void printFrag(){  
    for (int i = 0; i < 3; i++) {  
        for (int j = i; j >= 0; j--) {  
            System.out.println(i + " " + j);  
        }  
        System.out.println("--");  
    }  
}
```