

## CSE 143x Section Handout #4 Solutions

1.

```
public static void boyGirl(Scanner input) {
    int boys = 0;
    int girls = 0;
    int diff = 0;    // difference between boys' and girls' sum

    while (input.hasNext()) {
        String throwAway = input.next(); // throw away name
        if (boys == girls) {
            boys++;
            diff -= input.nextInt();
        } else {
            girls++;
            diff += input.nextInt();
        }
    }
    System.out.println(boys + " boys, " + girls + " girls");
    System.out.println("Difference between boys' and girls' sums: " + Math.abs(diff));
}
```

or

```
public static void boyGirl(Scanner input) {
    int boys = 0;
    int girls = 0;
    int people = 0;
    int boySum = 0;
    int girlSum = 0;

    while (input.hasNext()) {
        String throwAway = input.next(); // throw away name
        people++;
        if (people % 2 == 1) {
            boys++;
            boySum += input.nextInt();
        } else {
            girls++;
            girlSum += input.nextInt();
        }
    }
    int diff = Math.abs(boySum - girlSum);
    System.out.println(boys + " boys, " + girls + " girls");
    System.out.println("Difference between boys' and girls' sums: " + diff);
}
```

2.

```
public static void evenNumbers(Scanner input) {
    int count = 0;
    int evens = 0;
    int sum = 0;
    while (input.hasNextInt()) {
        int number = input.nextInt();
        count++;
        sum += number;
        if (number % 2 == 0) {
            evens++;
        }
    }
    double percent = 100.0 * evens / count;
    System.out.println(count + " numbers, sum = " + sum);
    System.out.printf("%d evens (%.2f%%)\n", evens, percent);
}
```

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## CSE 143x Section Handout #4 Solutions (continued)

3.

```
public static boolean negativeSum(String line) {
    Scanner lineScan = new Scanner(line);
    int sum = 0;
    int count = 0;
    while (lineScan.hasNextInt()) {
        int next = lineScan.nextInt();
        sum += next;
        count++;
        if (sum < 0) {
            System.out.println(sum + " after " + count + " steps");
            return true;
        }
    }

    System.out.println("no negative sum");
    return false; // not found
}
```

4.

```
public static void collapseSpaces(Scanner input) {
    while (input.hasNextLine()) {
        String line = input.nextLine();
        Scanner words = new Scanner(line);
        if (words.hasNext()) {
            System.out.print(words.next());
            while (words.hasNext()) {
                System.out.print(" " + words.next());
            }
        }
        System.out.println();
    }
}
```

5.

```
public static void leetSpeak(Scanner input, PrintStream output) {
    while (input.hasNextLine()) {
        String line = input.nextLine();
        Scanner lineScanner = new Scanner(line);
        while (lineScanner.hasNext()) {
            String word = lineScanner.next();
            word = word.replace("o", "0");
            word = word.replace("l", "1");
            word = word.replace("e", "3");
            word = word.replace("a", "4");
            word = word.replace("t", "7");
            if (word.endsWith("s")) {
                word = word.substring(0, word.length() - 1) + "Z";
            }
            output.print("(" + word + ") ");
        }
        output.println();
    }
}
```

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6.

```
public static String substring(String s, int a, int b) {
    String result = "";
    for(int i = a; i < b; i++) {
        result += s.charAt(i);
    }
    return result;
}
```

7.

```
public static String replaceAll(String original, String pattern, String replacement) {
    String result = "";
    for(int i = 0; i < original.length(); i++) {
        boolean patternMatch = true;
        if(i <= original.length() - pattern.length()) {
            for(int j = 0; j < pattern.length(); j++) {
                if(original.charAt(i + j) != pattern.charAt(j))
                    patternMatch = false;
            }
        } else {
            patternMatch = false;
        }
        if(patternMatch) {
            result += replacement;
            i += pattern.length() - 1;
        } else {
            result += original.charAt(i);
        }
    }
    return result;
}
```