

Key to CSE142 Sample Midterm, Winter 2018

1. Expression	Value
<code>4 * (2 + 4) - 3 * 5.5</code>	7.5
<code>6 % 4 + 4 % 6 + 6 % 6</code>	6
<code>15 / 4 / 3.0 - 18 / 5 + (15 / 10.0)</code>	-0.5
<code>3 + 3 + "3 * 3" + (3 + 3) * 3 % 3</code>	"63 * 30"
<code>(11 != 7 + 4    3 * 2 &lt;= 39 % 10) == false</code>	false

2. The program produces the following output:

```
you calls you with person
app calls home with screen
me calls (person) with (person)
app calls screen with home
```

3. Method Call	Output Produced
<code>ifElseMystery(4, 7);</code>	9 6
<code>ifElseMystery(5, 5);</code>	5 5
<code>ifElseMystery(8, 3);</code>	12 9
<code>ifElseMystery(1, 12);</code>	14 11
<code>ifElseMystery(9, 6);</code>	12 9
<code>ifElseMystery(3, 4);</code>	8 4

4. Method Call	Output Produced
<code>mystery(6);</code>	6 0
<code>mystery(34)</code>	7 1
<code>mystery(721);</code>	1 3
<code>mystery(65289);</code>	3 5

5.	<code>x == 1</code>	<code>x % 2 == 1</code>	<code>y == 0</code>
Point A	sometimes	sometimes	always
Point B	never	sometimes	sometimes
Point C	sometimes	sometimes	never
Point D	never	never	sometimes
Point E	always	always	sometimes

6. One possible solution appears below.

```
public static void giveProblems(Scanner console, int numProblems) {
    Random r = new Random();
    int numRight = 0;
    for (int i = 1; i <= numProblems; i++) {
        int x = r.nextInt(12) + 1;
        int y = r.nextInt(12) + 1;
        System.out.print(x + " * " + y + " =? ");
        int answer = x * y;
        int response = console.nextInt();
        if (response == answer) {
            System.out.println("correct");
            numRight++;
        } else {
            System.out.println("incorrect...the answer was " + answer);
        }
    }
    System.out.println(numRight + " of " + numProblems + " correct");
}
```

7. One possible solution appears below.

```
public static int printSequenceTo(double value) {
    double sum = 0.5;
    System.out.print("1/2");
    int n = 1;
    while (sum < value) {
        n++;
        System.out.print(" + " + n + "/" + (n + 1));
        sum = sum + (double) n / (n + 1);
    }
    System.out.println(" = " + sum);
    return n;
}
```

8. Two possible solutions appear below.

```
public static String acronym(String s) {
    String result = "";
    if (s.charAt(0) != ' ') {
        result += s.charAt(0);
    }
    for (int i = 1; i < s.length(); i++) {
        if (s.charAt(i - 1) == ' ' && s.charAt(i) != ' ') {
            result += s.charAt(i);
        }
    }
    return result.toUpperCase();
}
```

```
public static String acronym2(String s) {
    boolean inWord = false;
    s = s.toUpperCase();
    String result = "";
    for (int i = 0; i < s.length(); i++) {
        char ch = s.charAt(i);
        if (ch == ' ') {
            inWord = false;
        } else if (!inWord) {
            inWord = true;
            result += ch;
        }
    }
    return result;
}
```