

CSE142 Midterm Key  
Summer 2019

1. Expression	Value
$3 * 4 + 5 * 6$	42
$23 \% 5 - 17 \% (16 \% 10)$	-2
"1" + 2 + 3 * 4 + (5 + 6)	"121211"
$1.5 * 2 + 20 / 3 / 4.0 + 6 / 4$	5.5
$345 / 10 / 3 + 10 / (5 / 2.0)$	15.0

2. The program produces the following output:

```
semi missing a brace and a 42
semi missing a 42 and a 8
brace missing a literal and a semi
84 missing a 1 and a cse
```

3. Method Call	Output Produced
<code>ifElseMystery(2, 7);</code>	11 7
<code>ifElseMystery(6, 6);</code>	6 16
<code>ifElseMystery(4, -1);</code>	3 0
<code>ifElseMystery(11, 10);</code>	11 21
<code>ifElseMystery(-10, 7);</code>	0 17
<code>ifElseMystery(100, 5);</code>	99 6

4. Method Call	Output Produced
<code>mystery(0);</code>	1 1
<code>mystery(7);</code>	2 12
<code>mystery(32);</code>	3 123
<code>mystery(256);</code>	4 1234

5.	num < 0	first < second	num >= second
Point A	sometimes	never	always
Point B	never	sometimes	sometimes
Point C	never	always	never
Point D	never	sometimes	sometimes
Point E	always	sometimes	sometimes

6. One possible solution appears below.

```
public static void spinWheel(Random r, int n) {
    int spin = r.nextInt(5) * 10 + 20;
    System.out.print("spins: " + spin);
    int count = 0;
    if (spin == 20) {
        count++;
    }
    int totalSpins = 1;
    while (count < n) {
        spin = r.nextInt(5) * 10 + 20;
        totalSpins++;
        System.out.print(", " + spin);
        if (spin == 20) {
            count++;
        } else {
            count = 0;
        }
    }
    System.out.println();
    System.out.println(n + " in a row after " +
        totalSpins + " spins");
}
```

7. One possible solution appears below.

```
public static boolean balanceCheckbook(Scanner console) {
    System.out.print("initial balance? ");
    double balance = console.nextDouble();
    System.out.print("how many transactions? ");
    int count = console.nextInt();
    double min = balance;
    for (int i = 1; i <= count; i++) {
        System.out.print(i + "/" + count + " amount? ");
        double amount = console.nextDouble();
        balance = balance + amount;
        System.out.println("new balance = $" + balance);
        if (balance < min) {
            min = balance;
        }
    }
    System.out.println("minimum balance = $" + min);
    return (min < 0);
}
```

8. One possible solution appears below.

```
// Use a boolean flag to keep track of beginning of words
public static String hashTag(String s) {
    String result = "";
    boolean firstLetter = true;
    for (int i = 0; i < s.length(); i++) {
        if (s.charAt(i) == ' ') {
            firstLetter = true;
        } else {
            if (firstLetter) {
                result += Character.toUpperCase(s.charAt(i));
                firstLetter = false;
            } else {
                result += Character.toLowerCase(s.charAt(i));
            }
        }
    }
    return "#" + result;
}
```