

a)

```

1  public class BMICalculator2 {
2      public static void main(String[] args) {
3          // declare variables
4          double height;
5          double weight;
6          double bmi;
7
8          // compute BMI
9          height = 70;
10         weight = 195;
11         bmi = weight / (height * height) * 703;
12
13         // print results
14         System.out.println("Previous BMI:");
15         System.out.println(bmi);
16
17         // recompute BMI
18         weight = 180;
19         bmi = weight / (height * height) * 703;
20
21         // report new results
22         System.out.println("Current BMI:");
23         System.out.println(bmi);
24     }
25 }

```

The standard weight status categories associated with BMI ranges for adults are shown in the following table.

BMI	Weight Status
Below 18.5	Underweight
18.5 – 24.9	Normal
25.0 – 29.9	Overweight
30.0 and Above	Obese

For example, here are the weight ranges, the corresponding BMI ranges, and the weight status categories for a sample height.

Height	Weight Range	BMI	Weight Status
5' 9"	124 lbs or less	Below 18.5	Underweight
	125 lbs to 168 lbs	18.5 to 24.9	Normal
	169 lbs to 202 lbs	25.0 to 29.9	Overweight
	203 lbs or more	30 or higher	Obese

b)

```
1 public class WriteSquares2 {
2     public static void main(String[] args) {
3         for (int i = 1; i <= 5; i++) {
4             System.out.println(i + " squared = " + (i * i));
5         }
6     }
7 }
```

c)

```
1 // This program does not compile.
2 public class ScopeExample {
3     public static void main(String[] args) {
4
5         int x = 3;
6         int y = 7;
7         computeSum();
8     }
9
10    public static void computeSum() {
11        int sum = x + y; // illegal, x/y are not in scope
12        System.out.println("sum = " + sum);
13    }
```

---

```
    for (int i = 1; i <= 5; i++) {
        int squared = i * i;
        System.out.println(i + " squared = " + squared);
    }
    System.out.println("Last square = " + squared); // illegal
```

---

```
int squared = 0; // declaration is now in outer scope
for (int i = 1; i <= 5; i++) {
    squared = i * i; // change this to an assignment statement
    System.out.println(i + " squared = " + squared);
}
System.out.println("Last square = " + squared); // now legal
```

d)

```
for (int i = 1; i <= 10; i++) {  
    System.out.println(i + " squared = " + (i * i));  
}  
for (int i = 1; i <= 10; i++) {  
    System.out.println(i + " cubed = " + (i * i * i));  
}
```

---



```
for (int i = 1; i <= 5; i++) {  
    for (int i = 1; i <= 10; i++) { // illegal  
        System.out.println("hi there.");  
    }  
}
```

---

```
int i;  
for (i = 1; i <= 5; i++) {  
    System.out.println(i + " squared = " + (i * i));  
}
```

---



```
int i;  
for (i = 1; i <= 5; i++) {  
    for (i = 1; i <= 10; i++) {  
        System.out.println("hi there.");  
    }  
}
```

---



```
int i;  
for (i = 1; i <= 10; i++) {  
    for (i = 1; i <= 5; i++) {  
        System.out.println("hi there.");  
    }  
}
```

E)

```
1 public class DrawCone2 {
2     public static final int LINES = 5;
3
4     public static void main(String[] args) {
5         for (int line = LINES; line >= 1; line--) {
6             for (int i = 1; i <= (line - 1); i++) {
7                 System.out.print(" ");
8             }
9             int stars = 2 * LINES + 1 - 2 * line;
10            for (int i = 1; i <= stars; i++) {
11                System.out.print("*");
12            }
13            System.out.println();
14        }
15    }
16 }
```