Multiple Choice

1. Consider the following code segment.

```
int a = 5;
int b = 2;
double c = 3.0;
System.out.println(5 + a / b * c - 1);
```

What is printed when the code segment is executed?

(A) `0.666666666666667`

(B) `9.0`

(C) `10.0`

(D) `11.5`

(E) `14.0`

2. Consider the `processWords` method. Assume that each of its two parameters is a `String` of length two or more.

```
public void processWords(String word1, String word2)
{
    String str1 = word1.substring(0, 2);
    String str2 = word2.substring(word2.length() - 1);
    String result = str2 + str1;
    System.out.println(result.indexOf(str2));
}
```

Which of the following best describes the value printed when `processWords` is called?

(A) The value `0` is always printed.

(B) The value `1` is always printed.

(C) The value `result.length() - 1` is printed.

(D) A substring containing the last character of `word2` is printed.

(E) A substring containing the last two characters of `word2` is printed.

3. Which of the following statements assigns a random integer between 25 and 60, inclusive, to `rn`?

(A) `int rn = (int) (Math.random() * 25) + 36;`

(B) `int rn = (int) (Math.random() * 25) + 60;`

(C) `int rn = (int) (Math.random() * 26) + 60;`

(D) `int rn = (int) (Math.random() * 36) + 25;`

(E) `int rn = (int) (Math.random() * 60) + 25;`

4. Vehicles are classified based on their total interior volume. The `classify` method is intended to return a vehicle classification `String` value based on total interior volume, in cubic feet, as shown in the table below.

Vehicle size class	Total interior volume
Minicompact	Less than 85 cubic feet
Subcompact	85 to 99 cubic feet
Compact	100 to 109 cubic feet
Mid-Size	110 to 119 cubic feet
Large	120 cubic feet or more

The `classify` method, which does not work as intended, is shown below.

```
public static String classify(int volume)
{
   String carClass = "";
   if (volume >= 120)
   {
      carClass = "Large";
   }
   else if (volume < 120)
   {
      carClass = "Mid-Size";
   }
   else if (volume < 110)
   {
      carClass = "Compact";
   }
   else if (volume < 100)
   {
      carClass = "Subcompact";
   }
```

```
    else
    {
       carClass = "Minicompact";
    }
    return carClass;
}
```

The `classify` method works as intended for some but not all values of the parameter `volume`. For which of the following values of `volume` would the correct value be returned when the `classify` method is executed?

(A) `80`

(B) `90`

(C) `105`

(D) `109`

(E) `115`

5. Which of the following best describes the value of the Boolean expression shown below?

```
a && !(b || a)
```

(A) The value is always `true`.

(B) The value is always `false`.

(C) The value is `true` when `a` has the value `false`, and is `false` otherwise.

(D) The value is `true` when `b` has the value `false`, and is `false` otherwise.

(E) The value is `true` when either `a` or `b` has the value `true`, and is `false` otherwise.