Unit 1 Quiz

1. Consider the following code segment.

```
System.out.print(I do not fear computers. );   // Line 1
System.out.println(I fear the lack of them.);  // Line 2
System.out.println(--Isaac Asimov);            // Line 3
```

The code segment is intended to produce the following output but may not work as intended.

```
I do not fear computers. I fear the lack of them.
--Isaac Asimov
```

Which change, if any, can be made so that the code segment produces the intended output?

(A) In line 1, `print` should be changed to `println`.

(B) In lines 2 and 3, `println` should be changed to `print`.

(C) The statement `System.out.println()` should be inserted between lines 2 and 3.

(D) In lines 1, 2, and 3, the text that appears in parentheses should be enclosed in quotation marks.

(E) No change is needed; the code segment works correctly as is.

2. Consider the following code segment, which is intended to find the average of two positive integers, `x` and `y`.

```
int x;
int y;
int sum = x + y;
double average = (double) (sum / 2);
```

Which of the following best describes the error, if any, in the code segment?

(A) There is no error, and the code works as intended.

(B) In the expression `(double) (sum / 2)`, the cast to `double` is applied too late, so the average will be less than the expected result for even values of `sum`.

(C) In the expression `(double) (sum / 2)`, the cast to `double` is applied too late, so the average will be greater than the expected result for even values of `sum`.

(D) In the expression `(double) (sum / 2)`, the cast to `double` is applied too late, so the average will be less than the expected result for odd values of `sum`.

(E) In the expression `(double) (sum / 2)`, the cast to `double` is applied too late, so the average will be greater than the expected result for odd values of `sum`.

3. 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?

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(A) `0.666666666666667`

(B) `9.0`

(C) `10.0`

(D) `11.5`

(E) `14.0`

4. Consider the following code segment.

```
int w = 1;
int x = w / 2;
double y = 3;
int z = (int) (x + y);
```

Which of the following best describes the results of compiling the code segment?

(A) The code segment compiles without error.

(B) The code segment does not compile, because the `int` variable `x` cannot be assigned the result of the operation `w / 2`.

(C) The code segment does not compile, because the integer value `3` cannot be assigned to the `double` variable `y`.

(D) The code segment does not compile, because the operands of the addition operator cannot be of different types `int` and `double`.

(E) The code segment does not compile because the result of the addition operation is of type `double` and cannot be cast to an `int`.

5. Consider the following code segment.

```
System.out.print("AP");
System.out.println();
System.out.println("CS");
System.out.print("A");
```

What is printed as a result of executing the code segment?

(A) `APCSA`

(B)
```
APCS
A
```

(C)
```
AP
CSA
```

(D)
```
AP
CS
A
```

(E)
```
AP

CS
A
```

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6. Consider the following code segment.

```
double x = 4.5;
int y = (int) x * 2;
System.out.print(y);
```

What is printed as a result of executing the code segment?

(A) `8`

(B) `8.0`

(C) `9`

(D) `9.0`

(E) `10`

7. Consider the following code segment.

```
double firstDouble = 2.5;
int firstInt = 30;
int secondInt = 5;
double secondDouble = firstInt - secondInt / firstDouble + 2.5;
```

What value will be assigned to `secondDouble` when the code segment is executed?

(A) `5.0`

(B) `12.5`

(C) `25.5`

(D) `29.0`

(E) `30.5`

8. Consider the following code segment.

```
System.out.print("One");   // Line 1
System.out.print("Two");   // Line 2
System.out.print("Three"); // Line 3
System.out.print("Four");  // Line 4
```

The code segment is intended to produce the following output, but does not work as intended.

```
OneTwo
ThreeFour
```

Which of the following changes can be made so that the code segment produces the intended output?

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(A) Changing `print` to `println` in line 1 only

(B) Changing `print` to `println` in line 2 only

(C) Changing `print` to `println` in line 3 only

(D) Changing `print` to `println` in lines 2 and 3 only

(E) Changing `print` to `println` in lines 1, 2, 3, and 4

9. The following code segment is intended to round `val` to the nearest integer and print the result.

```
double val = -0.7;
int roundedVal = (int) (val + 0.5);
System.out.println(roundedVal);
```

Which of the following best describes the behavior of the code segment?

(A) The code segment works as intended.

(B) The code segment does not work as intended because `val` and `roundedVal` should be declared as the same data type.

(C) The code segment does not work as intended because the expression `(val + 0.5)` should be cast to a `double` instead of an `int`.

(D) The code segment does not work as intended because `val` should be cast to an `int` before `0.5` is added to it.

(E) The code segment does not work as intended because the expression `(int) (val + 0.5)` rounds to the nearest integer only when `val` is positive.

10. Consider the following code segment.

```
int y = 5;
y--;
y += 4;
y = y * 2;
y /= 4;
y++;
y *= y;
System.out.println(y);
```

What is printed when the code segment has been executed?

(A) 20

(B) 25

(C) 30

(D) 35

(E) Nothing prints because the code won't compile as written

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11. Consider the following code segment, which is intended to display 2.5.

```
int num1 = 25;
int num2 = 10;
double ans = num1 / num2;
System.out.print(ans);
```

Which of the following best describes the error, if any, in the code segment?

(A) There is no error and the code works as intended.

(B) The code should have cast the expression num1 / num2 to double.

(C) The code should have declared ans as an int.

(D) The code should have initialized num1 to 25.0 and num2 to 10.0.

(E) The code should have cast either num1 or num2 in the expression num1 / num2 to double.