Primitive Types – Quiz 1

This quiz has 16 questions.

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1. Consider the following code segment.

```
System.out.print("cyan");
System.out.println("magenta");
System.out.print(" yellow");
System.out.print("black ");
```

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

Ⓐ
```
cyan magenta
yellow black
```

Ⓑ
```
black  yellow magenta
cyan
```

Ⓒ
```
cyanmagenta
 yellow
black
```

Ⓓ
```
cyan magenta
 yellowblack
```

Ⓔ
```
cyanmagenta
 yellowblack
```

Ⓐ Ⓑ Ⓒ Ⓓ **Ⓔ** Ⓕ

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2. Consider the following code segment.

```
System.out.print("hello");   //L1
System.out.println("world"); //L2
```

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

```
hello world
```

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

Ⓐ Inserting `System.out.println();` between lines `L1` and `L2`

Ⓑ Inserting `System.out.print();` between lines `L1` and `L2`

Ⓒ Changing `print` in line `L1` to `println`

Ⓓ Changing `println` in line `L2` to `print`

Ⓔ Adding a space character within the quotation marks before the word `world`

Ⓐ Ⓑ Ⓒ Ⓓ **Ⓔ** Ⓕ

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3. Consider the following code segment.

```
System.out.println("Ready"); //Line 1
System.out.println("Set");   //Line 2
System.out.println("Go!");   //Line 3
```

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

```
Ready
Set
Go!
```

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

Ⓐ Changing `println` to `print` in lines 1 and 2

Ⓑ Changing `println` to `print` in lines 2 and 3

Ⓒ Interchange lines 1 and 3

Ⓓ No change is needed; the code segment works correctly as is.

Ⓔ Replacing all instances of double quotes (`"`) in the code segment with single quotes (`'`).

Ⓐ Ⓑ Ⓒ **Ⓓ** Ⓔ Ⓕ

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4. Each of the following code segments is intended to print the word `Hello`. Which of the following code segments works as intended?

I.
```
System.out.print("He");
System.out.println("llo");
```

II.
```
System.out.print("Hello");
```

III.
```
System.out.print(“Hel”);
System.out.println();
System.out.print(“lo”);
```

Ⓐ I only

Ⓑ II only

Ⓒ III only

Ⓓ I and II

Ⓔ II and III

Ⓐ Ⓑ Ⓒ **Ⓓ** Ⓔ Ⓕ

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5. A teacher determined student percentages in a course as the points a student earns divided by the total points available in the grading period. Points are awarded only in whole number increments, but student percentages are to be stored as decimals.

   The following code segment appears in a program used to compute student percentages. Points that a student earns are stored in `pointsEarned`, the total points available in the grading period are stored in `totalPoints`, and the student percentage is stored in `percentage`.

   Which of the following are the most appropriate variable declarations to store the values?

   Ⓐ
   ```
   int pointsEarned;
   int totalPoints;
   boolean percentage;
   ```
   Ⓑ
   ```
   double pointsEarned;
   double totalPoints;
   int percentage;
   ```
   Ⓒ
   ```
   boolean pointsEarned;
   int totalPoints;
   double percentage;
   ```
   Ⓓ
   ```
   double pointsEarned;
   double totalPoints;
   boolean percentage;
   ```
   Ⓔ
   ```
   int pointsEarned;
   int totalPoints;
   double percentage;
   ```

   Ⓐ Ⓑ Ⓒ Ⓓ **Ⓔ** Ⓕ

6. Which statement correctly declares a variable that can store a temperature rounded to the nearest tenth of a degree?

   Ⓐ `boolean patientTemp;`

   Ⓑ `patientTemp = 0.0;`

   Ⓒ `patientTemp = 0;`

   Ⓓ `double patientTemp;`

   Ⓔ `int patientTemp;`

   Ⓐ Ⓑ Ⓒ **Ⓓ** Ⓔ Ⓕ

7. Consider the following code segment:

   ```
   /* data type 1 */ x = true;
   /* data type 2 */ y = 0.5;
   ```

   Which of the following best describes the data types that should be used to replace `/* data type 1 */` and `/* data type 2 */` so that the code segment compiles without error?

   Ⓐ The variable `x` should be declared as `boolean` and the variable `y` should be declared as `int`.

   Ⓑ The variable `x` should be declared as `int` and the variable `y` should be declared as `boolean`.

   Ⓒ The variable `x` should be declared as `double` and the variable `y` should be declared as `boolean`.

   Ⓓ The variable `x` should be declared as `boolean` and the variable `y` should be declared as `double`.

   Ⓔ The variable `x` should be declared as `int` and the variable `y` should be declared as `int`.

   Ⓐ Ⓑ Ⓒ **Ⓓ** Ⓔ Ⓕ

8. Consider the following code segment:

   ```
   int y;
   x = 2;
   y = /* missing expression */;
   x = 1 + 2 * y;
   System.out.print(x);
   System.out.println(y);
   ```

   Which of the following can be used as a replacement for `/* missing expression */` so that the code segment prints `73`?

   Ⓐ `3`

   Ⓑ `x`

   Ⓒ `x - 1`

   Ⓓ `x + 1`

   Ⓔ `1 - 2 * x`

   Ⓐ Ⓑ Ⓒ **Ⓓ** Ⓔ Ⓕ

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9. The volume of a cylinder is equal to the height times the area of the circular base. The area of the circular base is equal to π (pi) times the square of the radius.

   The code segment below is intended to compute and print the volume of a cylinder with radius `r` and height `h`. Assume that the `double` variable `r`, `h`, and `pi` have been properly declared and initialized.

```
/* missing code*/
System.out.print(volume);
```

   Which of the following can be used to replace `/* missing code */` so that the code segment works as intended?

   I.
```
double baseArea = pi * r * r;
double volume = baseArea * h;
```

   II.
```
double volume = pi * r * r;
baseArea = volume * h;
```

   III.
```
double rSquare = r * r;
double volume = pi * rSquare * h;
```

   Ⓐ I only

   Ⓑ III only

   Ⓒ I and III only

   Ⓓ II and III only

   Ⓔ I, II, and III

   Ⓐ Ⓑ **Ⓒ** Ⓓ Ⓔ Ⓕ

10. Consider the following code segment, which is intended to display `5.5`.

```
int num1 = 555;
int num2 = 10;
double ans = num1 / num2 / 10.0;
System.out.print(ans);
```

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

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

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

   Ⓒ The code should have cast either `num1` or `num2` in the expression `num1 / num2` to `double`.

   Ⓓ The code should have declared `num1` and `num2` as `double`.

   Ⓔ The code should have initialized `num1` to `55` and `num2` to `10.0`.

   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ

11. Consider the following code segment.

```
int x = 1;
int y = 2;
/* missing code*/
System.out.print(top/(bottom+1));
```

   Which of the following replacements for `/* missing code */` will cause an `ArithmeticException` to occur?

   I.
```
int top = x + 1;
int bottom = y – top;
```

   II.
```
int top = 2 * x;
int bottom = y – top;
```

   III.
```
int top = x + y;
int bottom = y – top;
```

   Ⓐ I only

   Ⓑ II only

   Ⓒ III only

   Ⓓ I and II

   Ⓔ II, and III

   Ⓐ Ⓑ **Ⓒ** Ⓓ Ⓔ Ⓕ

12. Consider the following code segment.

```
int j = 6;
int k = 8;
j += 2;
k -= j;
System.out.print(j);
System.out.print(" ");
System.out.println(k);
```

   What is printed when the code segment is executed?

   Ⓐ `2 2`

   Ⓑ `–2 +2`

   Ⓒ `8 0`

   Ⓓ `8 16`

   Ⓔ `8 18`

   Ⓐ Ⓑ **Ⓒ** Ⓓ Ⓔ Ⓕ

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13. Consider the following code segment.

```
int x = -1;
x++;
x -= 1;
x = x + 1;
x -= -1;
System.out.println(x);
```

What is printed when the code segment has been executed?

Ⓐ `-1`

Ⓑ `0`

Ⓒ `1`

Ⓓ `2`

Ⓔ `3`

Ⓐ Ⓑ **Ⓒ** Ⓓ Ⓔ Ⓕ

14. Consider the following code segment, which is intended to display `2.0`.

```
int fact1 = 4 / 3;
int fact2 = 1 * 2;
double product = fact1 * fact2;
System.out.println(product);
```

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

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

Ⓑ The denominator of both the expressions `4 / 3` and `1 * 2` should both be cast as `int`.

Ⓒ The numerator of both the expressions `4 / 3` and `1 * 2` should both be cast as `double`.

Ⓓ The expression `fact1 * fact1` should be cast as `double` .,

Ⓔ The variables `fact1` and `fact2` should both be declared as `double`.

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ

15. Consider the following code segment, which is intended to calculate the average of two quiz scores.

```
int sum = 20 + 25;
double avg = sum;
avg /= 2;
```

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

Ⓐ The code segment stored `22` in `avg` because `22` is the result of the integer division of `45` by `2`.

Ⓑ The code segment stores `23` in `avg` because `23` is the result of the integer division of `45` by `2` .

Ⓒ The code segment stores `22.5` in `avg` because `22.5` is the result of the floating point division of `45.0` by `2`.

Ⓓ The code segment does not compile because `int` values cannot be assigned to `double` values.

Ⓔ The code segment does not compile because a `double` value cannot be divided by an `int` value.

Ⓐ Ⓑ **Ⓒ** Ⓓ Ⓔ Ⓕ

16. In the code segment below, assume that the `int` variables `a` and `b` have been properly declared and initialized.

```
int c = a;
int d = b;
c += 3;
d--;
double num = c;
num /= -d;
```

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

Ⓐ The code segment stores the value of `(a + 3) / b` in the variable `num`.

Ⓑ The code segment stores the value of `(a + 3) / (-b)` in the variable `num`.

Ⓒ The code segment stores the value of `(a + 3) / (b - 1)` in the variable `num`.

Ⓓ The code segment stores the value of `(a + 3) / (1 - b)` in the variable `num`.

Ⓔ The code segment causes a runtime error in the last line of code because `num` is type `double` and `d` is type `int`.

Ⓐ Ⓑ Ⓒ **Ⓓ** Ⓔ Ⓕ