

Introduction to Java

Exercise Packet #1

Evaluate the following expressions write the final value of the variable.

	Code	Final value of the variable(s)
1	int x = 5; x = x + 7; x = 2 * x - 1;	23
2	int z; z = 40; z = 30;	30
3	int a = 6, b = 8; a = b; b = a;	a = 8 b = 8
4	int num88 = 10; num88 = num88 + 5; num88 = 6; num88 = num88 + 7;	13
5	double pear = 1.5; pear = 2 * pear;	3.0
6	double d = 2.3; d = 5.0 + d / 10.0;	5.23
7	double num2, num1 = 4; num2 = (num1 + 6) / 2 + 3;	num1 = 4.0 num2 = 8.0

num 2: 4.0
num1: 4.0

There are errors in the code below. Explain.

8	int g; g = g + 6;	Line 2 has the error. Cannot add 6 to g when g has not been initialized.
9	int apples = 12; apples - 4 = apples; apples = apples + 4;	Line 2 has the error. Cannot assign a value to an expression.

Below are listed possible variable names. Circle Valid if the name is allowed and Invalid if the name is not allowed.

10	good_work	<input checked="" type="radio"/> Valid	<input type="radio"/> Invalid
11	number17	<input checked="" type="radio"/> Valid	<input type="radio"/> Invalid
12	7days	<input type="radio"/> Valid	<input checked="" type="radio"/> Invalid
13	hot dog	<input type="radio"/> Valid	<input checked="" type="radio"/> Invalid
14	double	<input type="radio"/> Valid	<input checked="" type="radio"/> Invalid

Evaluate the following expressions. There are no errors in the following code

	Code	Final value of the variable(s)
15	int x = 20 / 7 + 3;	x = 5
16	double z = 6 - 30 / 6.0;	z = 1.0
17	double abc = 70 / 8 + 2.0;	abc = 11.0 <i>note: 70/8 is int division</i>
18	double def = (6.0 + 4) / 100;	def = 0.1
19	double zed = 5.9; int x = (int) zed; zed = 2 * zed;	Hint. An assignment statement changes only the value of the variable on the left side. zed = 11.8 x = 5
20	double you = -13.9; double why = (int) (you - 0.5);	you = -13.9 why = -14.0 <i>cast the decimal part!</i>
21	int num = 5; num++; num++;	num = 7
22	int value = 0; value--;	value = -1
23	double h = 10; h += 5.1;	h = 15.1
24	int num = 23; num -= 5;	num = 18

25. How many numeric literals are in the code to the right? **4**

```
double x = 6;
x *= 0.3;
x = 5 / 4;
```

26. What is final value of x? **1.0**

Evaluate the following expressions and write the final value of the variable.

Write "ERROR" next to the one problem that contains an error.

	Code	Final value of the variable(s)
27	int n2 = 8; n2 = (int) (n2 + 1.7);	9
28	double tree = 11; int branch = 3 + tree;	Error on line 2. You cannot assign a double to an int.
29	int num1 = 12; num1 += 5; num1 = num1 / 3;	5
30	double num3 = 11.8; num3 = 11.1 + num3/ 10;	12.28

31. Circle the one invalid variable name: first_name BIG x8 **24hours**

<p>32. What should the name of the file be that contains this code?</p>	<pre>import java.util.Scanner; public class Quiz { public static void main(String [] args) { int z; Scanner in; in = new Scanner(System.in); System.out.println("Enter a number: "); z = in.nextInt(); z = 4 * z + 1; z = 2; System.out.println("z is " + z); } }</pre>
<p>Quiz.java</p>	
<p>33. How many assignments statements are in this code?</p>	
<p>4</p>	
<p>34. If the user enters "8" when asked for a number, what is displayed?</p>	
<p>z is 2</p>	

If the code contains an error, write "error."

<p>35. What is displayed?</p> <p>5, 5, 5</p>	<pre>int x = 9; int y = 4; int z = 5; x = z; y = x; z = y; System.out.println(x + ", " + y + ", " + z);</pre> <p><i>x: 5 y: 4 z: 5</i></p>
<p>36. What is the final value of w?</p> <p>Error on line 3.</p>	<pre>double w; w = 8; 11 = w;</pre> <p><i>w: w: 8.0 error</i></p>
<p>37. What is the final value of hum?</p> <p>7</p>	<pre>int hum; hum = 77 / 10;</pre> <p><i>int division</i></p>
<p>38. What is the final value of drum?</p> <p>2.0</p>	<pre>double drum; drum = 26 / 10;</pre> <p><i>int division but stored into double</i></p>
<p>39. What is the final value of somethingthathymeswithum?</p> <p>42</p>	<pre>int somethingthathymeswithum; somethingthathymeswithum = (int) 42.9;</pre>
<p>40. What is displayed?</p> <p>6.5</p>	<pre>double z = 5; z = z + 1.5; System.out.println(z); z = z + 10.0;</pre> <p><i>z: 5.0 6.5 16.5 but print is before +10!</i></p>
<p>41. What is the final value of n?</p> <p>Error on line 2. n not initialized.</p>	<pre>int n; n = n + 6;</pre>
<p>42. What is the final value of h?</p> <p>Error on line 2. double to int</p>	<pre>int h = 12; h = h / 2.0;</pre> <p><i>double answer. 64 bits cannot squeeze into 32 bits!</i></p>
<p>43. What is the final value of ez?</p> <p>10.0</p>	<pre>double ez; ez = 4.0 + 8.0 / 2 + 2;</pre>
<p>44. What is displayed?</p> <p>18</p>	<pre>int k = 15; k += 4; k--; System.out.println(k);</pre>

45. How many numeric literals are in this code? 4	int x = 8; x = 6 + x / 2 - 1; System.out.println(x);
46. What is displayed? 9	

47. The program below should calculate and display the average of two numbers. Complete the code. If the user enters 3 and 4, the output should be "The average is 3.5"

```
import java.util.Scanner;
```

```
public class Tester{
```

```
    public static void main(String [] args) {
        Scanner get = new Scanner( System.in );
        System.out.println( "Enter #1 " );
        int n1 = get.nextInt();
        System.out.println( "Enter #2 " );
        int n2 = get.nextInt();
```

```
        double avg = ( n1 + n2 ) / 2.0;
```

```
        System.out.println( "The average is " + avg );
```

```
    }
```

```
}
```

You can get this correct by using one line or both lines.

precedence says division comes before addition so use paranthesis.

48. The program below should calculate and display the final price of an item. The user enters the original price and then the discount (as a decimal).

For example, if the user enters "10" for the original price and ".2" for the discount (meaning 20%), the output should be "The final price is 8.0 dollars."

```
import java.util.Scanner;
```

```
public class Tester{
```

```
    public static void main(String [] args) {
        Scanner get = new Scanner( System.in );
        System.out.println( "What's the original cost? " );
        double cost = get.nextDouble();
        System.out.println( "What's the discount? " );
        double discount = get.nextDouble();
```

```
        double d = cost * discount;
```

```
        cost = cost - d;
```

```
        System.out.println( "The final price is " + cost + " dollars. " );
```

```
    }
```

```
}
```

You do not have to use all the blank lines to get this correct.