



Term 1 – Unit 1 – Week 4

Exam Review 1

1. Define Primitive Data Type. List 4 primitive data types in Java.
2. Which takes up more memory, an int or a double?
3. Correct the following. Check no correction if the code is correct.
 - a. `int val = 7.5;` No Correction
 - b. `double score = 89;` No Correction
 - c. `double avg = test1 + test2 /2;` No Correction
4. What is output?

```
System.out.println("Answer = " + 67 + 3);
```
5. What characters do each of the following represent?
`\n` _____ `\t` _____ `\\` _____
6. What is modular division? When is it used?
7. You have two integer variables, minutes and hours. Minutes moves up by one. Which of the following will correctly update hour and minutes?
 - a. `minutes = minutes % 60;`
 - b. `minutes = minutes + hours % 60;`
 - c. `hours = hours + minutes / 60;`
`minutes = minutes % 60;`
 - d. `hours = hours + minutes % 60;`
`minutes = minutes / 60;`
 - e. `hours = hours + minutes / 60;`
8. Evaluate the following expressions:

| | |
|----------------------|-------|
| <code>6 % 6 =</code> | _____ |
| <code>8 % 6 =</code> | _____ |
| <code>4 % 7 =</code> | _____ |
| <code>6 % 3 =</code> | _____ |
| <code>9 % 7 =</code> | _____ |
9. What is roundoff error?
10. Correct the following code so that it does not trigger roundoff error:


```
double val = scan.nextDouble();
System.out.println(val - 13.89);
```



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Exam Review 1 – Solution

1. Define Primitive Data Type. List 4 primitive data types in Java.

A built-in data type that holds only 1 value at a time.

Examples include int, double, boolean, and char.

2. Which takes up more memory, an int or a double?

A double takes up twice as much memory as an int.

3. Correct the following. Check no correction if the code is correct.

a. `int val = 7.5;`

No Correction

`int val = (int)7.5;`

b. `double score = 89;`

No Correction

`(or val = 7;)`

c. `double avg = test1 + test2 / 2;`

No Correction

`double avg = (double)(test1 + test2) / 2;`

4. What is output?

`(or 1.0 * (test1 + test2) / 2;)`

```
System.out.println("Answer = " + 67 + 3);
```

Answer = 673

5. What characters do each of the following represent?

`\n` New Line

`\t` Tab

`\\` Back Slash

6. What is modular division? When is it used?

Modular division gives the remainder in division. It is used in patterns and for time and money conversions.

7. You have two integer variables, minutes and hours. Minutes moves up by one. Which of the following will correctly update hour and minutes?

a. `minutes = minutes % 60;`

b. `minutes = minutes + hours % 60;`

c. `hours = hours + minutes / 60;`

`minutes = minutes % 60;`

d. `hours = hours + minutes % 60;`

`minutes = minutes / 60;`

e. `hours = hours + minutes / 60;`

8. Evaluate the following expressions:

`6 % 6 = 0`

`8 % 6 = 2`

`4 % 7 = 4`

`6 % 3 = 0`

`9 % 7 = 2`

9. What is roundoff error?

Roundoff error is the error that occurs in double calculations because computers cannot represent decimal values exactly. These errors can be avoided by converting double values to ints.

10. Correct the following code so that it does not trigger roundoff error:

```
double val = scan.nextDouble();
```

```
System.out.println( 1.0*Math.round( 1000*(val - 13.89) )/1000);
```

*Students can run this using 67.897 to see roundoff error in action.

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