

Comp 106
Sample
Examination
Answers

NAME: _____ **KEY** _____

Answer all questions on the test paper. No calculators or any other electronic devices may be used during the test. The exam is a closed book exam. Show all of your work. The test is 75 minutes long.

1. (15 pts) Given the following definitions and operations provide the resulting values for the indicated items

a. `int n = 6`
`final int m = 13;`
`n /= m;`
`m /= n;`

n

m

or does not
compile w/o error

b. `int n = 17;`
`final int m = 4;`
`int p, q;`
`p = n/m;`
`q = n%m;`

p

q

c. `int n = 6;`
`int m = 9;`
`int p = ++n + m++;`

p

n

m

2. (20pts) Locate and mark all errors, for each error, identify the type of error, i.e., syntax (compiler) errors, logical errors, and runtime errors. Correct the errors and write the output of the program.

```
public class Test
```

```
{
    public static void main(string[] args;)
    {
        int x = 2;
        int y = 3;;
        final int z = 9;
```

```
        System.out.println(" x/y is " + x/y);
        System.out.println (" x%/y is " + x%/y);
```

```
        System.out.println (" y/x is " + y/x);
        System.out.println (" y%/x is " + y%/x )
```

```
        /* Place output here
```

```
        x/y is 0
        x%/y is 2
        y/x is 1
        y%/x is 1
```

```
        */
```

```
        y = (z * 2)/3;           // 9*2/3 → 6
        z = z/3;                // 9/3 → 3 but z = 9
        x += y;                 // 2 + 6 → 8   2 + 3 → 5
```

```
        System.out.println("y: " + y);
        System.out.println ( " z : " + z)
        System.out.println ( " x: " + x );
```

```
        /* Place output here
```

```
        y: 6
        z: 9
        if assume y == 6 then x: 8
        if assume y == 3 then x: 5
```

```
        */
```

```
    }
}
```

3. (15 pts). Given the algorithm

```
if (a <= b)
{
  if (b < c) return a;
  else if (a < c) return a;
  else return c;
}
else
{
  if (a < c) return b;
  else if (a < c) return b;
  else if (b < c) return b;
  return c; // equivalent simplification
}
```

if (a < c) return b;
else if (a < c) return b;
else return c;

compute the results returned if the input values are as follows

<u>a</u>	<u>b</u>	<u>c</u>	<u>result returned</u>
3	6	-3	
67	-13	-24	
0	0	-2	
76	-1	-56	