

CMPSC 100
Computational Expression
Fall 2018
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Solutions to Final Exam Review Questions

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

public class Semi {
    public static void main(String[] args) {
        int i = 10,
            j = 20,
            k = 30;
        if (k > i+j) {
            System.out.println(k);
        }
        else {
            for (int m = 0; m < 10; m++) {
                System.out.println(m);
            }
        }
    }
}
```

<pre>if (i ≠ 3) // ==, not = { j = i+i; }</pre> <p style="text-align: center;">(a)</p>	<pre>if (i < 3) > // No ";" { j = i+i; }</pre> <p style="text-align: center;">(b)</p>
<pre>if (i ≠ 1) // should be <={ j = i+i; }</pre> <p style="text-align: center;">(c)</p>	<pre>if (i ≠ 3) // "!(i>3)" or "i <= 3" { j = i+i; }</pre> <p style="text-align: center;">(d)</p>
<pre>2. if (i != 3) { j = i+i; } > // no semicolon else { j = i-i; }</pre> <p style="text-align: center;">(e)</p>	<pre>if (i == 3) (i == 4) // add ()s { j = i+i; }</pre> <p style="text-align: center;">(f)</p>
<pre>if (i != 3 i != 4) // add text { j = i+i; }</pre> <p style="text-align: center;">(g)</p>	<pre>if (i == 2 && j == 2) // add text { i = i+i; }</pre> <p style="text-align: center;">(h)</p>

<p>3. for (int i = 3; i < 10; i++) // = { sum = sum + i; }</p> <p>(a)</p>	<pre>int i = 10; while (i < 3) ; // no semicolon { sum = sum + i; }</pre> <p>(b)</p>
<pre>for (int i <= 10) // wrong form { // for(int i=1;i<=10;i++) sum = sum+i; }</pre> <p>(c)</p>	<pre>for (int j=0; j<10; j=j+1) // ";"s { sum = sum + j; }</pre> <p>(d)</p>

<pre>int j = 3; while (j = 3) // == or >= or... { sum = sum+j; if (sum % 7 != 0) j++; }</pre> <p>(e)</p>	<pre>for (int i = 0; i < 10; i++) ; // no ; { j = i+i; }</pre> <p>(f)</p>
<pre>int j = 10; while ((j >= 10) && (j < 20)) // ({ j = j+1; }</pre> <p>(g)</p>	<pre>for (int k = 0; k = 10; k++) // <= { System.out.print(k); }</pre> <p>(h)</p>

<pre>String s = "hello"; String t = 10; // "10" String u = s + t;</pre> <p>(a)</p>	<pre>boolean b; int i = 20; b = false; int j = i + b; // can't add int and boolean</pre> <p>(b)</p>
<pre>int i = 10, j = 20; i + 10 = j; // variable only</pre> <p>(c)</p>	<pre>double d = 5; int k = d; // can't use double</pre> <p>(d)</p>
<p>4. <pre>int i = 10, j = 10.5, k = 11; // can't use double</pre></p> <p>(e)</p>	<pre>Scanner scan = new Random(); // wrong class</pre> <p>(f)</p>
<pre>char c = "A"; // 'A'</pre> <p>(g)</p>	<pre>Random rand = new Random(()); // ()</pre> <p>(h)</p>
<pre>System.out.println("\"); // escape character</pre> <p>(i)</p>	<pre>int single = 1, double = 2, triple = 3; // reserved word</pre> <p>(j)</p>

5.

<pre>// "Get" method for x: public int getX() { return x; }</pre>	<pre>// "Set" method for x: public void setX(int xNew) { x = xNew; }</pre>
<pre>// "Get" method for y: public double getY() { return y; }</pre>	<pre>// "Set" method for y: public void setY(double yNew) { y = yNew; }</pre>
<pre>// "Get" method for z: public String getZ() { return z; }</pre>	<pre>// "Set" method for z: public void setY(String zNew) { z = zNew; }</pre>
<pre>// "Get" method for b: public boolean getB() { return b; }</pre>	<pre>// "Set" method for b: public void setB(boolean bNew) { b = bNew; }</pre>

6. (a)

```
public Thing(int x1, double y1, String z1, boolean b1) {
    x = x1; // or this.x = x1;
    y = y1; // or this.y = y1;
    z = z1; // or this.z = z1;
```

- ```

 b = b1; // or this.b = b1;
 }
(b) Thing t = new Thing(17, 5.5, "Hello", true);

7. public static void main(String[] args) {
 Tree t1 = new Tree("oak",true);
 Tree t2 = new Tree("elm",true);
 Tree t3 = new Tree("pine",false);
 }

8. Alpha a = new Alpha(42,"large");
 Beta b = new Beta(a);
 System.out.println(b.getAlf());

```

9.

|                             |                   |
|-----------------------------|-------------------|
| count = 9<br>(a)            | count = 11<br>(b) |
| count = 2+3+4+5 = 14<br>(c) | count = 4<br>(d)  |
| count = 6<br>(e)            | count = 10<br>(f) |
| count = 5<br>(g)            | count = 4<br>(h)  |

10.

|                       |                       |
|-----------------------|-----------------------|
| a = 30, b = 20<br>(a) | a = 10, b = 30<br>(b) |
| a = 5, b = 20<br>(c)  | a = 0, b = 40<br>(d)  |
| a = 20, b = 20<br>(e) | a = 40, b = 30<br>(f) |

- ```

11.      int sum = 0;
        int odd = 1;
        for (int count = 1; count <= 20; count++) {
            sum = sum + odd;
            odd = odd + 2;
        }

12.      if ((x % 3 == 0) || (x >= 10 && x <= 20)) {
        System.out.println("yes");
    }
    else {
        System.out.println("no");
    }

13.      int count = 0;
        System.out.println("Enter a value (<= 0 to quit): ");
        double value = scan.nextDouble();
        while (value > 0) {
            if (value > 10.0) {
                count++;
            }
        }
    }

```

```

    }
    System.out.print("Enter a value (<= 0 to quit): ");
    value = scan.nextDouble();
}

```

14.

finalexam (of type String) (a)	in (of type String) (b)
finalam (of type String) (c)	9 (of type int) (d)
true (of type boolean) (e)	abcexam5 (of type String) (f)

15. (a) smallest: -5; largest: 4
 (b) Possible values are 'b', 'c', and 'd'
 (c) `rand.nextInt(6)*2`
 (d) `rand.nextDouble()*20.0 - 10.0`
16. `int i = scan.nextInt();`
`String s = scan.next();`
`double d = scan.nextDouble();`
17. (a) `sList.get(3)` equals "frog"
 (b) `sList.size()` equals 4
 (c) `sList.contains("at")` is false
 (d) `sList.get(0).contains("at")` is true
 (e) Final value is `m = "dogfrog"`
 (f) `for (int i = sList.size()-1; i >= 0; i--) {`
 `System.out.println(sList.get(i));`
`}`
18. `ArrayList<Integer> iList = new ArrayList<Integer>();`
`for (int i = 0; i < 1000; i++) {`
 `iList.add(i);`
`}`
19. `for (int i = 0; i < 25; i++) {` `for (int i = 1; i <= 25; i++) {`
 `x[i] = 3*(i+1);` OR `x[i-1] = 3*i;`
`}` `}`
20. See the glossary at the end of your book for the definitions.
21. When we need to use a class such as `Random`, `Scanner`, `Date`, `ArrayList`, `Color`, `JFrame`, etc.—something that is not in a pre-loaded Java package but is one of the many, many libraries of special-purpose packages that are available in Java, we use an `import` statement to tell Java to include those classes or packages.