

# CIS 1068 Practice Problems: Decision

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## 1. Understanding code

Draw a representation of what the a) computer's memory (including all variables), and b) screen (if applicable) looks like at the end of each of these programs:

```
public class Boolean-Declarations {
    public static void main(String [] args) {
        boolean b;
        boolean c = true;
        boolean d = false;
        boolean e = c;
        c = false;
    }
}
```



```
public class Boolean-Expressions {
    public static void main(String [] args) {
        boolean b = true || false;
        boolean c = false && true;
        boolean d = !b || c;
        b = !b;
        d = !(b && (c || d));
    }
}
```

```
public class Relational-Expressions {
    public static void main(String [] args) {
        int x = 3;
        double y = 4.7;
        boolean b = x <= y && y <= 2 * x;
        boolean c = 2 * x == x + 3;
        boolean d = b && x != 3;
    }
}
```

```
public class Conditions-Basic {
    public static void main(String [] args) {
        boolean b = true;
        System.out.println(b);
        if(b) {
            System.out.println("reached here");
        }
    }
}
```

```

public class Complex-Conditions {
    public static void main(String [] args) {
        int x = 3;
        double y = 4.7;
        if(x <= y && 2 * x >= y + 1) {
            System.out.println("reached here?");
        }
        System.out.println("and here?");
    }
}

public class Conditions-IfElse {
    public static void main(String [] args) {
        int x = 3;
        double y = 4.7;
        if(x > y) {
            System.out.println("x = " + x);
        } else {
            System.out.println("y = " + y);
        }
        System.out.println("reached here?");
    }
}

public class Conditions-If-ElseIf {
    public static void main(String [] args) {
        int x = 3;
        double y = 4.7;
        if(x > y) {
            System.out.println("x = " + x);
        } else if(x > 3) {
            System.out.println("y = " + y);
        }
        System.out.println("reached here?");
    }
}

public class Conditions-If-ElseIf-Else {
    public static void main(String [] args) {
        int x = 3;
        double y = 4.7;
        if(x > y) {
            System.out.println("x = " + x);
        } else if(x > 3) {
            System.out.println("y = " + y);
        } else {
            System.out.println("x <= 3");
        }
        System.out.println("reached here?");
    }
}

```

## 2. Select the correct printout result of the following program

1) The following program will print out ( )

```
x=90;
if (x<60)
System.out.println ("Case 1");
else
if (x < 80)
System.out.println ("Case 2");
else
System.out.println ("Case 3");
```

(a) Case 1      (b) Case 2      (c) Case 3      (d) Others

2) The following program will print out ( )

```
x=90;
if (x<60)
System.out.println ("Case 1");
if (x < 80)
System.out.println ("Case 2");
else
System.out.println ("Case 3");
```

(a) Case 1      (b) Case 2      (c) Case 3      (d) Others

3) The following program will print out ( )

```
x=90;
if (x<60) {
System.out.println ("Case 1");
if (x < 80)
System.out.println ("Case 2");
}
else
System.out.println ("Case 3");
```

(a) Case 1      (b) Case 2      (c) Case 3      (d) Others

4) The following program will print out ( )

```
x=90;
if (x>60) {
System.out.println ("Case 1");
if (x < 80)
System.out.println ("Case 2");
}
else
System.out.println ("Case 3");
```

(a) Case 1      (b) Case 2      (c) Case 3      (d) Others

5) The following program will print out ( )

```
x=70;
if (x>60) {
System.out.println ("Case 1");
if (x < 80)
System.out.println ("Case 2");
}
else
System.out.println ("Case 3");
```

(a) Case 1 (b) Case 2 (c) Case 3 (d) Others

6) The following program will print out ( )

```
x=90;
if (x>60)
System.out.println ("Case 1");
if (x < 80)
System.out.println ("Case 2");
else
System.out.println ("Case 3");
```

(a) Case 1 (b) Case 2 (c) Case 3 (d) Others

7) The following program will print out ( )

```
x=90;
y=1;
if (x>60)
y=2;
if (x < 80)
y=3;
else
y=4;
System.out.println (y);
```

(a) 1 (b) 2 (c) 3 (d) 4

8) The following program will print out ( )

```
x=90;
y=1;
if (x>60) {
y=2;
if (x < 80)
y=3;
}
else
y=4;
System.out.println (y);
```

(a) 1 (b) 2 (c) 3 (d) 4

9) The following program will print out ( )

```
x=90;
y=0;
if (x>60)
y+=1;
if (x < 80)
y+=2;
else
y+=3;
System.out.println (y);
```

- (a) 0 (b) 1 (c) 2 (d) 3 (e) 4 (f) 5 (g) 6

10) The following program will print out ( )

```
x=90;
y=0;
if (x>60) {
y+=1;
if (x < 80)
y+=2;
}
else
y+=3;
System.out.println (y);
```

- (a) 0 (b) 1 (c) 2 (d) 3 (e) 4 (f) 5 (g) 6

### 3. Writing Java Programs with Conditions

- a. (DivisionReport.java) Write a program that reads two ints from the keyboard, and prints a message saying whether the first one *divides* the second one evenly (divisible by).
- b. (PosNegReport.java) Write a program that reads in an int from the keyboard, and prints a message saying whether it is positive, negative, or zero.
- c. (CallNumber.java) Given the call number of a book via keyboard (stored in variable *n*), display the location of it in the library stacks according to the following table.

---

Call number	Location
100 to 199	basement
200 to 500 and over 900	main floor
510 to 900 except 700 to 750	upper floor
700 to 750	archives

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