

# CS 211 Object Oriented Programming

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Sample Midterm 1

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1. (10p) What is the result or each of the following expressions (assume `int x=1` and `int y=2`)?

(a) 3 (7/2)

(b) 8 `y+3*2`

(c) 3 `1+(x++)`

(d) 0 `(x+5)%2`

(e) 2.75 `y*3.0/4`

2. (10p) Which keyword or identifier would you use to:

(a) void show that a method doesn't return anything?

(b) \_\_\_\_\_ indicate that a method is independent of any class instance?

(c) int x=5; declare a primitive data type (any example is ok)?

(d) switch / else if select between one of several cases to execute (but not using `if`)?

(e) \_\_\_\_\_ begin a loop, if the loop closes with a `while`?

3. (15p) In each code segment, circle the part which will prevent the code from compiling (if there is more than one answer, it is sufficient to choose one, but be specific):

(a) `int x=1, y` **semicolon needed**  
`y = x;`

(b) **syntax error** `double y[10];` `Double[] y= new double[10];`  
`y[3] = 3.1;`

(c) `String x = "5";`  
`int y = x;` **different type int and str**

(d) `int x = 2;`  
`return (x>1);`  
`x += 1;` **code cant reach after return statement**

(e) `int x = 2;`  
`boolean flag = (x>2);`  
`if (flag) x = x - 1; }` **missing open {**

4. (9p) Write a statement or declaration for each of the following:

(a) A 2D array of `doubles`

`double[][] y= new double[][]`

---

(b) A method which everybody can see, which has two `int` parameters and returns a `double` value

`Text`

---

(c) An array of 4 `ints` which are all 2's

---

5. (12p) Write a condition which will produce the described result:

(a) Continue to loop until `checkCondition()` stops being `true`.

```
boolean b = true;

while (                ) {

    b = checkCondition();

}
```

(b) Print something if the integer `x` is between 1 and 4, inclusive

```
if (                ) {

    System.out.println("in-range");

}
```

(c) Print something if the integer `x` is even

```
if (                ) {

    x++;

} else {

    System.out.println("else");

}
```

6. (5p) Why would you not want to use `==` to compare if two Strings hold the same value?

7. (6p) Rewrite the **while** loop below as a **for** loop.

```
int i = 2;
while (i < 20) {
    System.out.println(i);
    i += 2;
}
```

8. (8p) Show the output of each of the following:

- (a) (assume that **list1** holds the values {1, 4, 3, 2, 5, 2} and **list2** holds the values {2, 4, 2, 5, 2, 3} in the following code segment)

```
int x = 0;

for (int i=0; i < list1.length; i++) {
    if (list1[i] < 3) {
        x -= list2[i];
    } else {
        x += list2[i];
    }
}
System.out.println(x);
```

- (b)
- ```
public class Test {
    public static int addToX(int x) {
        x += 5;
        return x;
    }

    public static void main(String[] args) {
        int x = 20;
        addToX(x);
        System.out.println(x);
    }
}
```

9. (15p) Given `list`, an array of `int`, write a code segment which will reverse the order of the elements in the array.

10. (10p) Write two constructors (a default constructor which initializes to zero, and a second one which takes an `int` value to assign to `value`), a getter and setter method for the following class. The constructors and setter method should restrict the input value to even numbers only (i.e. if the input is an odd number, it should be ignored, and in the case of the constructor, set to zero by default). Do not call the setter method from the constructor.

```
public class EvenNumber {  
  
    private int value;
```

```
}
```