

## CS163/CSS164: Worksheet Complex Conditionals and Composition

Name(s): \_\_\_\_\_

1. What is printed when the following code executes and x has been set to 3 and y has been set to 6?

```
if (x > 0 && (y / x) == 3)
{
    System.out.println("first case");
}
else
{
    System.out.println("second case");
}
```

2. What is printed when the following code executes and x has been set to 3 and y has been set to 6?  
Notice that it is now an **or** (||) instead of **and** (&&).

```
if (x > 0 || (y / x) == 3)
{
    System.out.println("first case");
}
else
{
    System.out.println("second case");
}
```

3. Consider the following code segment. What is printed as a result of executing the code segment?

```
int x = 10;
int y = 5;

if (x % 2 == 0 && y % 2 == 0 || x > y)
{
    System.out.print("First ");

    if (y * 2 == x || y > 5 && x <= 10)
    {
        System.out.print("Second ");
    }
    else
    {
        System.out.print("Third ");
    }
}
```

Complex Conditionals Activities can be found on CSAwesome – Chapter 3:

<https://runestone.academy/ns/books/published/csawesome/Unit3-If-Statements/topic-3-5-compound-ifs.html?mode=browsing>

4. Analyze the codes provided, answer the questions, and implement the required methods.
- Circle the instance variables of each class.
  - Explain the toString method for Person and Animal class.
  - For the Animal constructor, what is the only “this.” that could be removed from that method? Why?
  - Implement the sets and gets for all Animal instance variables.
  - Write exactly what is going to be printed in the terminal is we run the main method.

```
public class Person {
    private String name;
    private String phone;

    public Person(String name, String phone){
        setName(name);
        setPhone(phone);
    }
    public void setName(String name){
        this.name = name;
    }
    public void setPhone(String phone){
        this.phone = phone;
    }
    public String toString(){
        return String.format("Name: %s\nPhone:%s\n", name, phone);
    }
}

public class Animal {
    private String name;
    private int yearsOld;
    private Person owner;

    public Animal(String name, int years, Person owner){
        this.name = name;
        this.yearsOld = years;
        this.owner = owner;
    }
    /**
     * Implement sets and gets for all instance variables
     */
    public String toString(){
        return String.format("Animal name: %s, Years old: %d\nOwners Info\n%s", name,
yearsOld, owner.toString());
    }
}

public class App {
    public static void main(String args[]){
        Person owner = new Person("Maria", "9990001234");
        Animal animal = new Animal("puppy", 1, owner);
        System.out.println(animal.toString());
    }
}
```

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