Javascript Scope Exercises

1. Determine what this Javascript code will print out (without running it):

```
x = 1;
var a = 5;
var b = 10;
var c = function(a, b, c) {
                    var x = 10;
                    document.write(x);
                    document.write(a);
                    var f = function(a, b, c) {
                                        b = a; document.write(b);
                                        b = c;
                                        var x = 5;
                                }
                    f(a,b,c);
                    document.write(b);
            }
c(8,9,10);
document.write(b);
document.write(x);
```

Output: 10 8 8 9 10 1

2. What is the difference between a method and function?
In Javascript, a function is treated as an object with key/value pair. If the value is primitive data type like Integer, String, Boolean then it is property. And, if the value is a function, then it is called a Method.

3. What does 'this' refer to when used in a Java method?
In Java method, ‘this’ refer to the current instance of the method on which it is being used. It can be used to specifically denote the instance variable instead of static or local variable.

4. What does 'this' refer to when used in a JavaScript method?
In JavaScript method, ‘this’ refer to the object and its method on which it is being used.

5. What does 'this' refer to when used in a JavaScript constructor function?
In JavaScript constructor function, ‘this’ refer to the global object.

6. Assume object x is the prototype for object y in Javascript. Object x has a method f( ) containing keyword 'this'. When f is called by x.f( ), what does 'this' refer to?
When f is called by x.f(), ‘this’ refers to Object y.

7. What is a free variable in JavaScript?
It is a variable referred by function which is not its parameters or local variables.

8. Create an object that has properties with name = "fred" and major="music" and a property that is a function that takes 2 numbers and returns the smallest of the two, or the square of the two if they are equal.

```
var ob = {
        name: “fred”,
        major: “music”,
        smallest: function(x, y) {
                if(x == y) {
                        return x * x;
                } else {
                        return x < y ? x : y;
                }
        }
};
```

9. Write Javascript code for creating three Employee objects using the "new" keyword and a constructor function. Employee objects have the following fields: name, salary, position.

```
function Employee(name, salary, position) {
        this.name = name;
        this.salary= salary;
        this.position = position;
}

var foo = new Employee(“Foo”, 15000, “Developer”);
var bar = new Employee(“Bar”, 16500, “Manager”);
var tar = new Employee(“Tar”, 18000, “Director”);
```