

# Exercises: Core JavaScript

Note: you do not need an HTML page to test basic pure-client-side JavaScript functions. Start Tomcat, open <http://localhost/>, hit F12 to bring up Firebug, and test stuff out interactively in the Console. Or, if you want to save your JavaScript examples so that you can look at them later, write a JavaScript file and cut/paste the expressions into the command line at the bottom (or right) of Console.

1. Make a function that squares a number. Test it.
2. Make another function that multiplies a number by 2. Test it.
3. Make a function that returns either the function of number 1 or the function of number 2 at random. For example:

```
var f = getRandomFunction();  
f(6); // Might return 12; might return 36  
f(6); // Returns whatever it did in the above line
```
4. Make a function that takes two arguments: a function and an array of numbers. It should apply the function to each entry in the array, add up the results, and return the sum. So if you call `yourNewFunction(square, [1, 2, 3])`, it should return 14 (the sum of the squares of 1, 2, and 3).
5. Make an array of numbers and an array of Strings. Call “sort” on each. For example:

```
[1, 2, 3, 6, 5, 4].sort()
```
6. Dig around in the online references and figure out how to specify the comparison function when calling “sort”. Write a function “isShorter” and use it to sort some strings from the shortest to the longest.
7. Write a comparison function that will sort strings from the longest to the shortest. Repeat as little code as possible.
8. Write a comparison function that will sort strings as follows:
  - Any strings containing “Superpages” (any case) should be first
  - Any strings containing `<wow>` or `</wow>` (lowercase only) should be second
  - Any strings containing 3 or more exclamation points or question marks (in any order) should be third
  - Any strings that don’t match any of the rules should be fourth
  - Any strings containing “Yellowbook” (any case) should be last