

Exercises: Unit testing with JsUnit

1. Write a math utilities file with three functions:
 - A function to calculate the **factorial** (written as $n!$) of an integer. The factorial of an integer is the product of that number and each integer below it down to 1. For example, $3! = 3*2*1 = 6$. First special case: $0!$ is 1 by mathematical convention. Second special case: illegal arguments (negative numbers, non-integers, non-numbers) should result in NaN. Use `Number.isInteger` to check if an entry is a whole number. You can also use `+n` to check that `n` is a number, but in this case you can probably just do the normal computations, and non-numbers will automatically yield NaN.
 - A function to **sum an array**. Special case: if any of the entries are not numbers, the function should return NaN. You can also use `+n` to force it to return `Nan` if `n` is not a number; depending on your approach, you may or may not have to do this. Test with one of the arguments as a string to see.
 - A function that determines **if two numbers are within a delta** of each other, i.e., that the absolute value (`Math.abs`) of their difference is less than or equal to the delta. First special cases: if any of the values are non-number, the result should be false. Second special case: a negative delta should be treated as if it were positive.
2. Write JsUnit tests.
3. Write a jQuery function that, given a selector, inserts the text "Hi!" inside the matching element(s).
4. Write JsUnit tests.
5. Put a file on the server that contains "Hi!" as its content. Write a jQuery function that, given a selector and optionally a function, will make an Ajax request using `load` and insert the contents of the file inside the matching element(s).
6. Write JsUnit tests. Note that you will have to use the `setUpPage` function as described in the online notes and shown in the sample code.