05.01 Lab Exercises - SOLUTION

LOOPS & ARRAYS

1. Write a for loop that makes the following array:

[3, 5, 7, 9, 11, 13, 15, 17, 19, 21]

Solution explained:

- New, empty array, holds the output
- Counter variable, i, starts at 3
- Loop continues as long as counter i <= 21
- Values are increasing by 2, so we need incrementer: i += 2.

```
const myNums = [];
for(let i = 3; i <= 21; i += 2) {
    myNums.push(i);
}
console.log(myNums);
```

2. Write a for loop that makes the following array:

[100, 80, 60, 40, 20, 0, -20, -40, -60, -80, -100]

Solution explained:

- New, empty array, holds the output
- Counter variable, `i`, starts at 100
- Loop continues as long as counter `i >= -100`
- Values are decreasing by 20, so we need decrementer: `i -= 20`.

```
const numsArr = [];
for(let i = 100; i >= -100; i -= 20) {
    console.log(i);
}
console.log(numsArr);
```

3. Given an array of numbers, use a for loop to add up all the numbers. Save the total to a variable, sum.

```
let nums = [154, 236, 314, 467, 532, 689, 703];
let sum = 0;
```

Solution expained:

- Loop through the array.

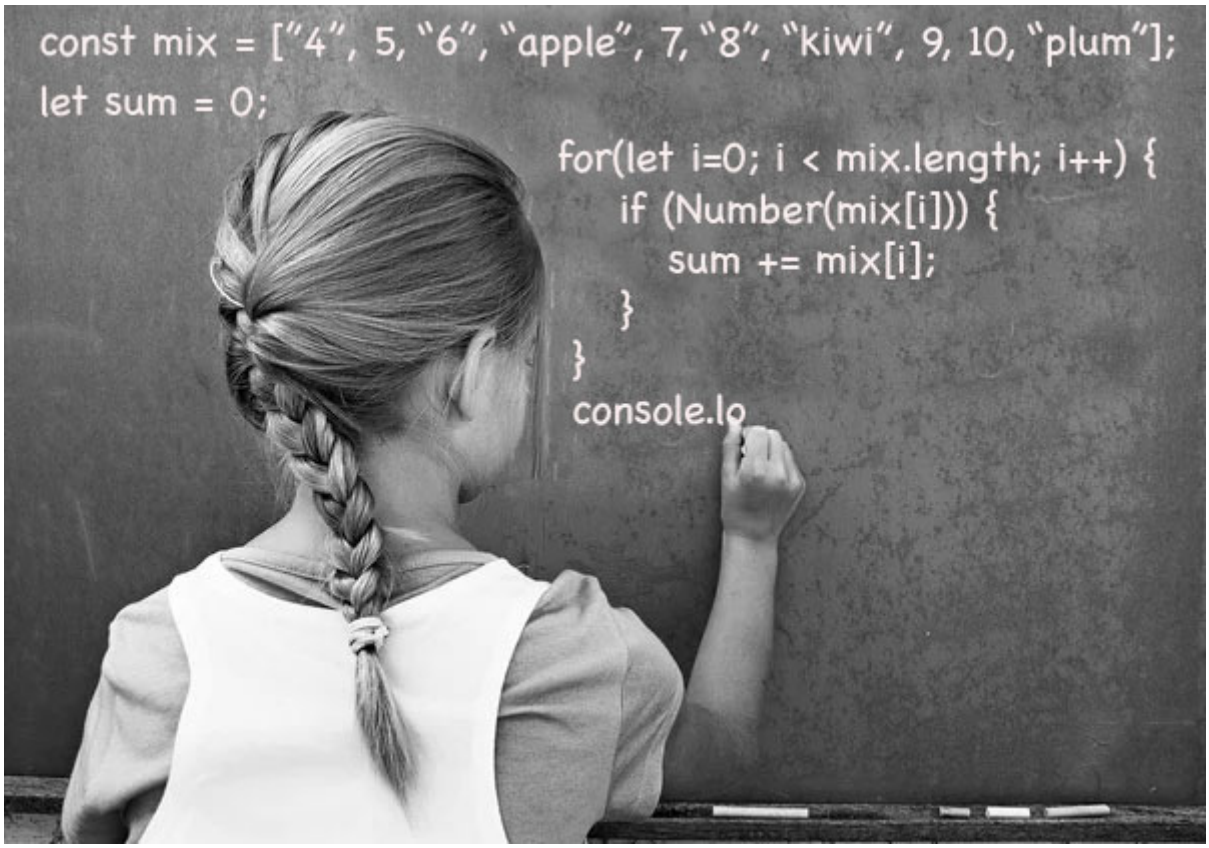
- Each time through, add the current item, nums[i] to sum.

```
for(let i = 0; i < nums.length; i++) {
    sum += nums[i];
}
console.log('nums sum:', sum); // 3095
```

4. Given this array of mixed numbers, 'number-like strings' and fruits, find the sum of the numbers and 'number-like strings'. This requires you to ignore the fruits and to convert the 'number-like strings' to actual numbers.
   Hint: Think Falsey!

```
const mix = [”4”, 5, “6”, “apple”, 7, “8”, “kiwi”, 9, 10, “plum”];
```

Solution explained



- Convert the 'num-like strings' to numbers, so that we can add them.
- Skip the fruits, since they cannot be converted to numbers.
- Add each eligible item as we loop through the array.
- Number('55') returns 55
- Number('apple') returns NaN.
- NaN is falsey, which returns false in a boolean context, e.g. in an if-statement.
- Therefore, pass each item to the Number() method and pass that to an if() statement. Any values that cannot be converted to a number -- these being the fruits -- will return NaN, and so the if-code will

not run.

- Inisde the if, add up values that are NOT NaN.

```
    let tot = 0;

    for(let i = 0; i < mix.length; i++) {
        if(Number(mix[i]) { // NaN is falsey
            tot += mix[i]; // only add truthy values
        }
    }
    console.log('mix tot:', tot);
```