QUIZ

This is the first JavaScript quiz. This quiz covers the topics of variables, constants, basic math, functions and arrays.

How to make this quiz

For your answers, create one JavaScript file. This is what you'll hand in! All of your answers go into this file.

Code questions

If a question requires you to write code, write it directly into the file, e.g. given this question:

> 1a. Create a variable "example" and initialize it with the number 1.

Inside the file, write the number of the question in a comment, and then write your answer below, like so:

```
// 1a.

let example = 1;

// 1b.

(the answer for 1b)

// etc.
```

Other questions

If a question requires an answer that is *not* code, you have to place your

answer after the number, e.g. given a question:

> 3b. What is the type of "hello"

Inside your file, write the answer like so:

```
...

// 3b. The type of "hello" is "string"

...
```

Notes about for loops

If you have already learned for (const ... of ...), feel free to use it in the questions that require for loops. If not, use for (let ...; ...; ...). Both are acceptable!

Alright, let's get started!!

1. Variables & constants

- 1a. Create a variable age and initialize it with your own age (you may lie if you want to).
- 1b. Create a constant name and initialize it with your name.
- 1c. Create a variable isMarried and initialize it with true if you're married, or with false if you're not (again, you may lie if you want to).
- 1d. It's your birthday! Increment the variable age by one.
- 1e. Is it possible to change the variable age after you've initialized it? Why?
- 1f. Is it possible to change the variable name after you've initialized it? Why?

2. Variable types

- 2a. What is the type of the variable age from section 1?
- 2b. What is the type of the variable name from section 1?
- 2c. What is the type of the variable isMarried from section 1?
- 2d. What does the following JavaScript evaluate into *("Evaluate into" is fancy for: "What is the value")*: typeof "4"
- 2e. Write code that writes the type of "Hello" to the console.
- 2f. What does the following JavaScript evaluate into: typeof true
- 2g. Given a **string** let x = "123", how can you turn this into a **number**?
- 2h. Given a **number** let x = 123, how can you turn this into a **string**?

3. Null, undefined and NaN

- 3a. Explain what undefined means.
- 3b. What does the acronym "NaN" mean?
- 3c. What is the type of NaN?

Given the following code:

```
let x;
let y = 0;
```

- 3d. What is the type of variable x?
- 3e. What is the type of variable y?
- 3f. How do you check if some variable called z is NaN?
- 3g. Which is correct: x == 4 or x === 4? Why?
- 3h. Which is correct: x == null or x === null? Why?

4. Maths & strings

- 4a. Write code that adds the numbers 10 and 15 and assigns the result to variable sum.
- 4b. What is the result of the following expression: 3 + 4 * 2?

- 4c. Add parentheses to the expression to make it result 14.
- 4d. What is the result of 20 - 8 - 2 - 4?
- 4e. Add parentheses to the expression to make it result 10.
- 4f. What is the result of "Hello," + "world"?
- 4g. What is the result of "Hello".length?

5. Booleans

- 5a. What is the type of true?
- 5b. Which other boolean value exists apart from true?
- 5c. What is the value of 1 === 10?
- 5d. What is the value of 10 === 10?
- 5e. What is the result of true === false?

Given the following code

```
let a = true;
let b = false;
```

- 5f. What is the *value* of !b?
- 5g. What is the *type* of !b?
- 5h. What is the *value* of a && b?
- 5i. What is the *value* of a || b?
- 5j. What is the *value* of false || false || false || true?
- 5k. What is the *value* of false && false && false && true?
- 5l. How can you write this shorter: a === true
- 5m. How can you write this shorter: a === false

6. Arrays

- 6a. Write code to create an empty array in variable arr1.
- 6b. What is the length of the array ["Beef", "Chicken", "Vegetarian"]?

Given the following array:

```
let arr = [10, 8, 1];
```

- 6c. Write code to replace the number 8 with 7.
- 6d. Write code to add the number 2 to the *end* of the array.
- 6e. Write code to add the number 12 to the *start* of the array.
- 6f. Write code that prints the first item in the array to the console.
- 6g. Write code that prints the items of an array arr to the console, each item should be logged separately (use a for loop!)
- 6h. What does the following JavaScript evaluate into: [].length
- 6i. Given an array let ingredients = ["Banana", "Oats", "Milk"], is it possible to add an item to the array?
- 6j. Given an array const ingredients = ["Banana", "Oats", "Milk"], is it possible to add an item to the array?

Given the following code

```
let arr1 = [1, 2, 3];
arr1.push(4);
arr1.shift();

let arr2 = [2, 3, 4];

let arr3 = [];
for (let i = 0; i < arr2.length; i++) {
        arr3.push(1);
}
```

- 6k. What is the result of arr1.length?
- 6l. What is the result of arr1 === arr2?
- 6m. What is the result of arr1[0] === arr2[0]?
- 6n. What is the value of arr3?

7. Functions

- 7a. Write a function called four that returns the value 4.

Given the following code:

```
function five() {
        return 5;
}
function add(a, b) {
        return a + b;
}
function run() {
        console.log("Running...");
}
function whatIsTheTypeOf(v) {
        console.log("The type of v is " + typeof v);
}
```

- 7b. What is the *type* of five()?
- 7c. What is the *type* of five?
- 7d. How many parameters does the function add have?
- 7e. How many parameters does the function five have?
- 7f. What is the *type* of add(1, 2)?
- 7g. What is the *type* of add("Hello, ", "world")?
- 7h. What is the *type* of run()?
- 7i. What does this code print to the console: whatIsTheTypeOf(8)?
- 7j. What does this code print to the console: whatIsTheTypeOf(run)?

8. Finale

- 8a. What does the following JavaScript evaluate into: typeof "4" === typeof 4?
- 8b. Given an array arr, of which *you do not know the length*. Write

code that prints the *last* element of the array to the console.

- 8c. Write a function that has one parameter called arr and it *returns* a number, which is the length of the array times two.
- 8d. Write a function that takes an argument name and prints to the console: "Hello, <name>, how are you doing?".
- 8e. Can you use template strings to do the same? If you already used template strings in 8d, can you write your function with the + operator?

Given the following code:

```
const ingredients = ["Banana", "Oats", "Milk"];
const commandString = "ls|cd|touch|cp";
```

- 8f. Write code that prints an ingredient list for pancakes using the variable ingredients. The list should look like this: "For pancakes, you will need Banana and Oats and Milk.". Use the function join!

> Note: you may use the + operator or ES6 template strings for question 8f!

- 8g. Use the function split to convert the string commandString into an array of commands.

- 8h. Write a function that doubles an array. It:
    - Has a parameter called arr, which should be an array.
        - Creates a new array (you may come up with the name).
        - Adds the elements of arr to the new array (use a for loop).
        - Adds *again* the elements of arr to the new array.
        - Returns the new array.