Math Object Methods:

Math.round()

The round() method rounds a number to the nearest integer.

var a = Math.round(2.60); Result: 3

Math.floor()

The floor() method rounds a number downwards to the nearest integer, and returns the result.

var a = Math.floor(0.60); Result: 0

Math.ceil()

The ceil() method rounds a number upwards to the nearest integer, and returns the result.

var a = Math.ceil(0.60); Result: 1

Math.abs()

The abs() method returns the absolute value of a number.

var a = Math.abs(-7.25); Result: 7.25

Math.random()

The random() method returns a random number from 0.

Math.floor((Math.random() * 100) + 1); Result: A random number.

Math.sqrt()

The sqrt() method returns the square root of a number.

var a = Math.sqrt(9); Result: 3

Math.pow(x, y)

The pow() method returns the value of x to the power of y (x^y).

```
var d = Math.pow(3, 3); Result: 27
```

Math.PI

```
var x = Math.PI;  Result: 3.141592653589793
```

Modulus

The modular operator (%) returns the division remainder.

```
var x = 5;    var y = 2;    var z = x % y;      Calculation: 5/2=2
Result: 2
```

Array Properties and Methods:

.length()

The length property sets or returns the number of elements in an array.

```
var fruits = ["Banana", "Orange", "Apple", "Mango"];
Fruits.length;
```

Result = 4

.pop()

The pop() method removes the last element of an array, and returns that element.

```
var fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits.pop();
```

Result = Banana,Orange,Apple

.push()

The push() method adds new items to the end of an array, and returns the new length.

```
var fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits.push("Kiwi");
```

Result = Banana,Orange,Apple,Mango,Kiwi

.sort()

The sort() method sorts the items of an array.
The sort order can be either alphabetic or numeric, and either ascending (up) or descending (down).
By default, the sort() method sorts the values as strings in alphabetical and ascending order.

```
var fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits.sort();
```

Result = Apple,Banana,Mango,Orange

.indexOf()

The indexOf() method searches the array for the specified item, and returns its position.
The search will start at the specified position, or at the beginning if no start position is specified, and end the search at the end of the array.
Returns -1 if the item is not found.

```
var fruits = ["Banana", "Orange", "Apple", "Mango"];
var a = fruits.indexOf("Apple");
```

Result = 2 (second position) Count always start at zero.

.slice()

The slice() method returns the selected elements in an array, as a new array object.

```
var fruits = ["Banana", "Orange", "Lemon", "Apple", "Mango"];
var citrus = fruits.slice(1, 3);
```

Result = Orange,Lemon

.splice()

The splice() method adds/removes items to/from an array, and returns the removed item(s).

```
var fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits.splice(2, 0, "Lemon", "Kiwi");
```

Result = Banana,Orange,Lemon,Kiwi,Apple,Mango

String properties:

.charAt()

The charAt() method returns the character at the specified index in a string.

```
var str = "HELLO WORLD";
var res = str.charAt(0);
```

Result = H

.charCodeAt()

The charCodeAt() method returns the Unicode of the character at the specified index in a string.

```
var str = "HELLO WORLD";
var n = str.charCodeAt(0);
```

Result = 72

Questions

1.

Write a program where you enter a number n, and the function outputs n even numbers. For example, if you enter 5, the output would be:

0 2 4 6 8

```
var evenArray = [];
var userInput = Number(prompt("Enter a number"));
var even = 0;
while(even <= userInput) {
    evenArray[even] = even * 2;
    even = even + 1;
}
alert(evenArray);
```

2.

3.

Write a program that creates an array with 10 random numbers,where each number is between 1 and 100. You are allowed to have the same number more than once. Output the result to the console.

```
function getRandomInt(min, max) {
   "use strict";
   if (max < min) {
      [min, max] = [min, max];
   }
   let range = max - min + 1;
   return Math.floor(Math.random() * range) + min;
}
let values = Array.from({length: 10}, () => getRandomInt(0, 100));
console.log(values);
```

4.

5.

6.

Write a program where the user enters a sentence, and the program

tells us which letter in the sentence occurs most frequently.

```
var mySentence = prompt("Enter your name");

var res = mySentence.split(" ");

mySentence = mySentence.toLowerCase();


alert(mySentence);

console.log(mySentence);
```

Comments:

I really got stucked on this one. I just can´t sort it and continue to last step. Getting errors, tried so many different things. It says "sort" Uncaught TypeError: Cannot read property 'sort' of undefined(…)

I looked at a several examples but just couldn´t make it work :/

I focused on nr 6 that' s why I haven´t made all the questions. I think it´s hard to understand what to use and when, and when I find a example to look at and try to understand it, it´s always in some other way then I want,

because some things are able to do in different ways. Sorry I couldn´t make it but it will be very intersting to se the solutions next week :)