1. How to access the second element of the array `let arr = [3, 7, 10]`

**Arr[1]**

2. For the code below, what does `arrNums.splice(2, 0)` return?

```javascript

let arrNums = [1, 2, 3, 4, 5];

```

**Will return the same array because on the position 2 we are deleting 0 elements**

3. What is the result of the following code :

```javascript

const oneTwoThree = [1, 2, 3]

const sevenEightNine = [7, 8, 9]

const all = [4, 5, 6, ...oneTwoThree, ...sevenEightNine];

console.log(all)

```

**const all=[4,5,6,1,2,3,7,8,9]**

4. What does the following code print to the console?

```javascript

let golf = {

type: "sport",

clubs: {

high\_end: "taylor made",

low\_end: "rusty basement clubs"

}

}

golf.clubs.high\_end = "callaway";

console.log(golf.clubs.high\_end);

```

**Callaway (reisigning a new value to the object)**

5. Can we define the function as follows? If yes, what is it called, and explain how to invoke it.

```javascript

const x = function(a, b){

return a\*b;

}

```

**X will take whatever value the function return**

6. Variables created \*\*without\*\* any keyword, are always global, even if they are created inside a function ? Yes or No and explain

```javascript

function x() {

a = 5;

}

**Yes**

#### Functions

7. In JavaScript can we pass functions as arguments to other functions? What does this code return ?

```javascript

function sayHello() {

return "Hello, ";

}

function greeting(helloMessage, name) {

console.log(helloMessage() + name);

}

greeting(sayHello, "JavaScript!");

```

**Yes in this case the the function Greeting will take whatever sayHello return and pass it as a parameter, in this case it will return : “Hello Javascript “**

8. Transform this function into an arrow function

```javascript

function sum(num1, num2){

return num1 + num2

}

sum(40,2)

sum(42,0)

console.log("the answer to everything is", sum(42,0))

**let sum =(num1, num2)=> num1 + num2**

**console.log(sum(40,2)) // 42**

**console.log(sum(42,0)) // 42**

9. What does the following code print to the console? Explain the process and concept behind it

```javascript

function foo () {

function bar() {

return "Poppin' bottles";

}

return bar();

}

console.log(foo());

```

**Poppin' bottles"; Poppin' bottles"; ??**

#### DOM

10. Which of the following events will you add in the `addEventListener()`method?

☐ click

☐ onclick

**click**

11. Does the `addEventListener()` method allow you to add many events to the same element?

```javascript

x.addEventListener("mouseover", func1);

x.addEventListener("click", func2);

x.addEventListener("mouseout", func3);`

**yes on every event will trigger different function**

```

12. DOM exercise

1. Part I : Create a button in your HTML page, when the user will click the the button a paragraph will be added on the DOM with the content "New Paragraph". Use arrow functions

**let btn = document.getElementById("btn")**

**btn.addEventListener("click",() => {**

**let par=document.createElement("p")**

**let text= document.createTextNode("new Paragraph")**

**par.appendChild(text)**

**let container=document.getElementById("container")**

**container.appendChild(par)**

**})**

1. Part II : Add to each new paragraph a event listener of mouse over. When you hoover on a paragraph, it should become red

**let btn = document.getElementById("btn")**

**btn.addEventListener("click",() => {**

**let par=document.createElement("p")**

**let text= document.createTextNode("new Paragraph")**

**par.appendChild(text)**

**let container=document.getElementById("container")**

**container.appendChild(par)**

**par.setAttribute("id", "test")**

**let paragraph = document.getElementById("test")**

**paragraph.addEventListener("mouseover",func)**

**})**

**function func(){**

**//console.log(e.target.outerText)**

**document.getElementById("test").style.color = "magenta";**

**}**

#### Array Methods

14. What is the value of `passed` in the following code?

```javascript

let marks = [67, 60, 89, 90, 67, 42];

let passed = marks.every(function(m) {

return m >= 50;

});

**TRUE – will return true because all the elements in the array are bigger or equal to 50**

15. What does the following code log?

```javascript

let nums = [10, 50, 88];

let bignums = nums.filter(function(n) {

return n > 10;

});

console.log(bignums);

**will return a new array with the element n the array that pass the function (50,88)**

```

16. Use a javascript array method to square the value of every element in the array.

```javascript

const input = [ 1, 2, 3, 4, 5 ];

//code

console.log(input) // [ 1, 4, 9, 16, 25]

**const input = [ 1, 2, 3, 4, 5 ];**

**for ( let x of input){**

**console.log(x\*x)**

**}**

```

16. Use 2 javascript array methods and chain them to return the sum of all the positives ones.

```javascript

const secondInput = [ 1, -4, 12, 0, -3, 29, -150];

//code

console.log(total) //42

secondInput.every(function(m) {

return m >0

});

**let newarray= secondInput.filter(function(m) {**

**return m >0**

**});**

**let result = newarray.reduce(function (acc,num){**

**return acc+num**

**})**

**console.log(result)**

```

17. Use 3 javascript methods and chain them to abbreviate the name and return the name initials.

```javascript

const input = 'George Raymond Richard Martin';

//code

console.log(initials)//'GRRM'

**const input = 'George Raymond Richard Martin';**

**let newstring= []**

**let array = input.split(' ')**

**// let newarray= array.filter(function(x){**

**// return x.charAt(0)**

**// })**

**for (let x of array){**

**newstring.push( x.charAt(0))**

**}**

**let result = newstring.reduce(function(acc,num){**

**return acc+num**

**})**

**console.log(result)**

```

#### Object and Classes

18. How the objects are passed in JavaScript? By Value or By Reference ? Explain with an example

**REFERENCE**

19. What will be printed in the console

```javascript

function Item(name, price) {

this.name = name;

this.price = price;

this.displayInfo = function() {

console.log(this.name + " is for $ " + this.price)

}

}

const cake = new Item("Chocolate Cake", 10);

cake.displayInfo();

**("Chocolate Cake" is for $ 10)**

```

20. Refactor this code using Classes

#### Promises

let myPromises =

21. What will be the output and why ? What will be the state of the promise ?

```javascript

Promise.resolve('Success!')

.then(data => {

return data.toUpperCase()

})

.then(data => {

console.log(data)

})

```

**SUCCES**

22. What log will be made by the following code, after 2 seconds?

```javascript

const p = new Promise(function(resolve, reject) {

setTimeout(function() {

resolve("OK");

}, 2000);

});

p.then().then(function(data) {

console.log(data);

});

**AFTER 2 SECONDS THE RESULT WILL BE OK**

```

23. Consider the following async function and its output. What will be displayed to the console when calling the `f()` function? Explain the process

```javascript

async function f() {

let result = 'first!';

let promise = new Promise((resolve, reject) => {

setTimeout(() => resolve('done!'), 1000);

});

result = await promise;

console.log(result);

}

f();

**after 1 sec will be display DONE and the first!**

```

24. Use async await, and fetch to a fact on cats and display it `https://catfact.ninja/fact`.

1. Create 2 functions : on to fetch data from API, the other one to display it on the page using the DOM

2. Make sure to use try and catch