## Question1: Answer The Following Questions

- 1- What is Closure? Give an example
- 2- What are callbacks?
- 3- What is recursion in a programming language? Give an example
- 4- Discuss Array Destructing
- 5- What does "use strict" do?

Question2: What Is The Output

1-

```
function func1(){
    setTimeout(()=>{
        console.log(x);
        console.log(y);
    },3000);

    var x = 2;
    let y = 12;
}

func1();
```

2-

```
let a = 0;
let b = false;
console.log((a == b));
console.log((a === b));
```

```
name = "John Doe";
const carDetails = {
    name: "Ford Mustang",
    yearBought: 2005,
    getName(){
       return name;
    },
    isRegistered: true
    };
console.log(carDetails.getName());
```

4-

```
const words = ["Functional", "Procedural", "Object-Oriented"];
const wordsLength = words.map(word => word.length);
```

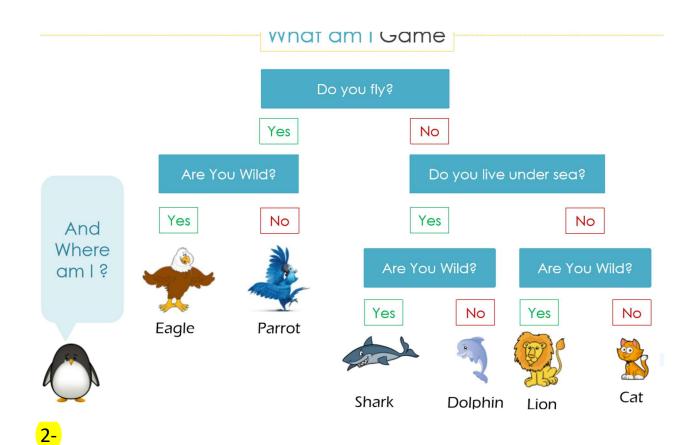
5-

```
function getArr({ nums } = { nums: [1, 2, 3, 4] }){
    return nums;
}

getArr();
getArr({nums:[5,4,3,2,1]});
```

Question 3: Write Js Code To Solve These Problems

1-



Write a function that converts an object into an array, where each element represents a key-value pair.

## Examples

 $toArray({ a: 1, b: 2 }) \rightarrow [["a", 1], ["b", 2]]$ 

3-

Your task is to create a Circle constructor that creates a circle with a radius provided by an argument. The circles constructed must have two getters getArea() (PIr^2) and getPerimeter() (2PI\*r) which give both respective areas and perimeter (circumference).

For help with this class, I have provided you with a Rectangle constructor which you can use as a base example.

4-

Create the function that takes an array with objects and returns the sum of people's budgets.

```
Examples

getBudgets([

{ name: "John", age: 21, budget: 23000 },

{ name: "Steve", age: 32, budget: 40000 },

{ name: "Martin", age: 16, budget: 2700 }

]) → 65700

getBudgets([

{ name: "John", age: 21, budget: 29000 },

{ name: "Steve", age: 32, budget: 32000 },

{ name: "Martin", age: 16, budget: 1600 }

]) → 62600

5-
```

Create a function that takes a "base number" as an argument. This function should return another function which takes a new argument, and returns the sum of the "base number" and the new argument.

Please check the examples below for a clearer representation of the behavior expected.

## **Examples**

```
// Calling makePlusFunction(5) returns a new function that takes an input,
// and returns the result when adding 5 to it.

const plusFive = makePlusFunction(5)

plusFive(2) → 7

plusFive(-8) → -3

// Calling makePlusFunction(10) returns a new function that takes an input,
// and returns the result when adding 10 to it.

const plusTen = makePlusFunction(10)

plusTen(0) → 10

plusTen(188) → 198

plusFive(plusTen(0)) → 15
```

## Question 4: (++Bonus)

- 1- Explain Encapsulation Vs Abstraction
- 2- Write a function that reverses all the words in a sentence that start with a particular letter.
- 3- Examples

specialReverse("word searches are super fun", "s")

→ "word sehcraes are repus fun"

specialReverse("first man to walk on the moon", "m")

→ "first nam to walk on the noom"

specialReverse("peter piper picked pickled peppers", "p")

→ "retep repip dekcip delkcip sreppep"

Notes

Reverse the words themselves, not the entire sentence.

All characters in the sentence will be in lower case.

Bestwishes,

GoodLuck 😊

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