

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 Destructuring

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));
```

3-

```
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-



2-

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

Examples

`toArray({ a: 1, b: 2 }) → [{"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()` (πr^2) and `getPerimeter()` ($2\pi r$) 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 sehcreas 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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