1. Given an array of numbers, return a new array where each number is doubled.

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

   Write the code to achieve this.

ANS :

```
const num [1,2,3,4,5];
res=num.map(ele=>(ele*2));
cnsole.log(res)
```

2.Write a function that filters out even numbers from an array.

const numbers = [10, 15, 20, 25, 30];

Expected output: [15, 25] Actual output:[10,20,30]

ANS :

```
const numbers = [10,15,20,25,30];
even=numbers.filter(ele=>ele%2!==0);
console.log(even);
```

3.Given an array of strings, use map to convert each string to uppercase.

const words = ["apple", "banana", "cherry"];

Actual output:['APPLE','BANANA','CHERRY']

ANS :

```
const words = ["apple","banana","cherry"];
res =words.map(ele => ele.toUpperCase());
console.log(res);
```

5.Use `forEach` to log each element of an array to the console.

```
const items = ["pen", "notebook", "eraser"];
```

ANS :

```
const items = ["pen", "notebook", "eraser"];
items.forEach(ele => console.log(ele));
```

6.Given an array of numbers, use `filter` to remove odd numbers, then use `map` to square the remaining numbers.

```
const numbers = [1, 2, 3, 4, 5, 6];
```

ANS :

```
const numbers = [1, 2, 3, 4, 5, 6];

const evenNumbers = numbers.filter(num => num % 2 === 0);

const squaredNumbers = evenNumbers.map(num => num **2);

console.log(squaredNumbers); // Output: [4, 16, 36]
```

7.Chain `map`, `filter`, and `reduce` to find the sum of squares of only the even numbers.

```
const numbers = [1, 2, 3, 4, 5, 6];
```

ANS :

```
const numbers = [1, 2, 3, 4, 5, 6];

const result = numbers

  .filter(num => num % 2 === 0)

  .map(num => num ** 2)

  .reduce((sum, num) => sum + num, 0);

console.log(result);
```

8.Given an array of objects representing people, filter out those below 18, then use `map` to extract their names.

```
const people = [
  { name: "Alice", age: 25 },
  { name: "Bob", age: 16 },
  { name: "Charlie", age: 30 }
];
```

ANS :

```
const people = [

  { name: "Alice", age: 25 },

  { name: "Bob", age: 16 },

  { name: "Charlie", age: 30 }

];
```

```
const adults = people.filter(person => person.age >= 18).map(person
=> person.name);


console.log(adults);
```

9.Given an array of strings, use `map` and `filter` to remove empty strings and convert the remaining ones to lowercase.

```
const words = ["Hello", "", "WORLD", "JavaScript", ""];
```

ANS :

```
const words = ["Hello", "", "WORLD", "JavaScript", ""];

const result = words.filter(word => word !== "").map(word => word.toLowerC
ase());

console.log(result);
```

10. Use `reduce` to group an array of numbers by even and odd.

```
const numbers = [1, 2, 3, 4, 5, 6];
```

Expected output: `{ even: [2, 4, 6], odd: [1, 3, 5] }`

ANS :

```
const numbers = [1, 2, 3, 4, 5, 6];
const groupedNumbers = numbers.reduce((acc, num) => {
 if (num % 2 === 0) {
  acc.even.push(num);
 } else {
  acc.odd.push(num);
 }
 return acc;
}, { even: [], odd: [] });
console.log(groupedNumbers);
```