Q1. Higher order Functions and their work:-

1. forEach => ForEach is like a loop it iterates ~~all over~~ ~~the~~ all the elements of array. and does ~~not~~ change the original array. Syntax :- forEach ((element, Index, array) => { ~~o~~ expression });

For exc :

```
Let arr = [1, 2, 3, 4, 5]
~~Let newarr = [ ]~~;

~~newarr =~~ arr.forEach((ele) => ~~ele%2==0~~
    console.log(ele%2==0));
```

and ~~it~~ will give output as

```
false
True
false
True
false
True.
```

It simply iterates over an array.

2. Map => Map is also like forEach, it only iterates over an array but rather than modifying original array it will return a new array.

Syntax :

```
Array.Map ((element, Index, array) => {
expression });
```

Forex:

```
Let arr =[1,2,3,4,5,6];
let new arr = arr.map((ele)=>{
    return ele%2 ==0 });

console.log (new arr);
```

The output will bee as:

```
[false, true, false, true, false, true].
```

3. Filter:

Filter is used to filter element satisfies the condition mentioned in it to a new array.

Syntax: ~~Arr~~

```
Array.filter((element, Index, array)=>{
    ~~return~~ expression });
```

er ex:

```
Let arr =[1,2,3,4,5,6]
Let newarr= arr.filter((ele)=>{
 return ele%2 ==0 });
Console.log(newarr);
```

utput will be:

```
[2,4,6].
```

4. reduce:.
Reduce is used to various functions like adding keys in object but first and foremost operation is it will iterate and reduce with the element in array.

Syntax:
```
Array.Prototype.reduce((accumulator, element, index, array) => {expression }), initial value);
```

For ex:
```
        Let arr=[1,2,3,4,5,6];
Let sum = arr.reduce((acc,ele) => {
        return ~~ele~~ acc+ele; });

console.log(sum);
```

output will be:
```
            21
```
1+2+3+4+5+6=21.

5. Sort:

Sort is a function used in array to sort or arrange elements in ascending or descending order.

Syntax:

Array.prototype.sort((a,b) => return a-b});

Here, a-b for ascending
b-a for descending.

For example:

Let arr[1,2,3,4,5,6];

console.log(arr.sort((a,b) => b-a));

Output will be:

[6,5,4,3,2,1].

2. The differences are :-

Map	For Each	reduce	Filter	Sort.
uses call back	-do-	-do-	-do-	-do-
new array.	NO	value	-do-	NO.
Parameter	3 parameter	4 parameter	3 param	2 param

3. Higher - order functions improve the code readability and reusability in manner of reducing long coding for loop and pushing in arrays.

~~4. Examples are given above and with same operations~~

4. From above given examples and with their operations help to solve like marks total, etc.

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