

Solutions:

JavaScript Array Method Challenges

1. Restaurant Billing with VAT

```
const bill = [100, 200, 150];
const withVAT = bill.map(p => p + p * 0.13);
const total = withVAT.reduce((a, b) => a + b, 0);
console.log(total.toFixed(1));
```

2. Passed Students Filter

```
const marks = [35, 80, 70, 25, 90];
const passed = marks.filter(m => m >= 40);
console.log(passed);
```

3. Most Expensive Item

```
const items = [199, 499, 1299, 850, 350];
const maxPrice = items.reduce((a, b) => a > b ? a : b);
console.log(maxPrice);
```

4. First Distinction

```
const scores = [50, 65, 77, 81, 60];
const firstDist = scores.find(s => s >= 80);
console.log(firstDist);
```

5. Delivery Completion

```
const deliveries = [true, true, false, true];
const allDelivered = deliveries.every(d => d);
console.log(allDelivered ? 'All delivered' : 'Not all delivered');
```

6. Game Scores Bonus

```
const scores = [30, 55, 70, 45, 90];
const final = scores.filter(s => s >= 50).map(s => s + 10);
console.log(final);
```

7. Total Items Sold

```
const sold = [2, 5, 7, 3];
const total = sold.reduce((sum, val) => sum + val, 0);
console.log(total);
```

8. Long Movie

```
const durations = [90, 110, 130, 100];
const long = durations.find(d => d > 120);
console.log(long);
```

9. Failed Students Check

```
const marks = [70, 55, 30, 85];
const anyFail = marks.some(m => m < 40);
console.log(anyFail ? 'There is a failed student' : 'All passed');
```

10. Capitalize Products

```
const items = ['milk', 'bread', 'butter'];
const caps = items.map(i => i.toUpperCase());
console.log(caps);
```

11. Meal Calories

```
const calories = [300, 450, 500];
const total = calories.reduce((a, b) => a + b, 0);
console.log(total);
```

12. Available Room

```
const rooms = ['booked', 'booked', 'available', 'booked'];
const index = rooms.findIndex(r => r === 'available');
console.log(index);
```

13. Out of Stock

```
const stock = [true, true, false, true];
const anyOut = stock.some(s => !s);
console.log(anyOut ? 'Some out of stock' : 'All available');
```

14. Product of Elements

```
const nums = [1, 2, 3, 4];
const product = nums.reduce((a, b) => a * b);
console.log(product);
```

15. Extract Numbers

```
const mixed = [1, 'hello', 3, true, 5];
const nums = mixed.filter(el => typeof el === 'number');
console.log(nums);
```

16. Count Score Frequency

```
const scores = [5, 2, 5, 6, 5];
const count = scores.filter(s => s === 5).length;
console.log(count);
```

17. Reverse a Name

```
const str = 'coding';
const reversed = str.split('').reduceRight((a, c) => a + c);
console.log(reversed);
```

18. Emoji Playlist

```
const playlists = ['Rock', 'Jazz', 'Pop'];
const updated = playlists.map(p => p + ' 🎵');
console.log(updated);
```

19. First Prime

```
const isPrime = n => n > 1 && [...Array(n).keys()].slice(2).every(i => n % i !== 0);
const nums = [4, 6, 8, 11, 15];
```

```
const prime = nums.find(isPrime);  
console.log(prime);
```

20. Remove Duplicates

```
const ids = [1, 2, 2, 3, 4, 4, 5];  
const unique = ids.filter((v, i, arr) => arr.indexOf(v) === i);  
console.log(unique);
```