CAT Reloaded

Back-End Circle

NodeJS Beginner - Week 7

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* Indicates required question

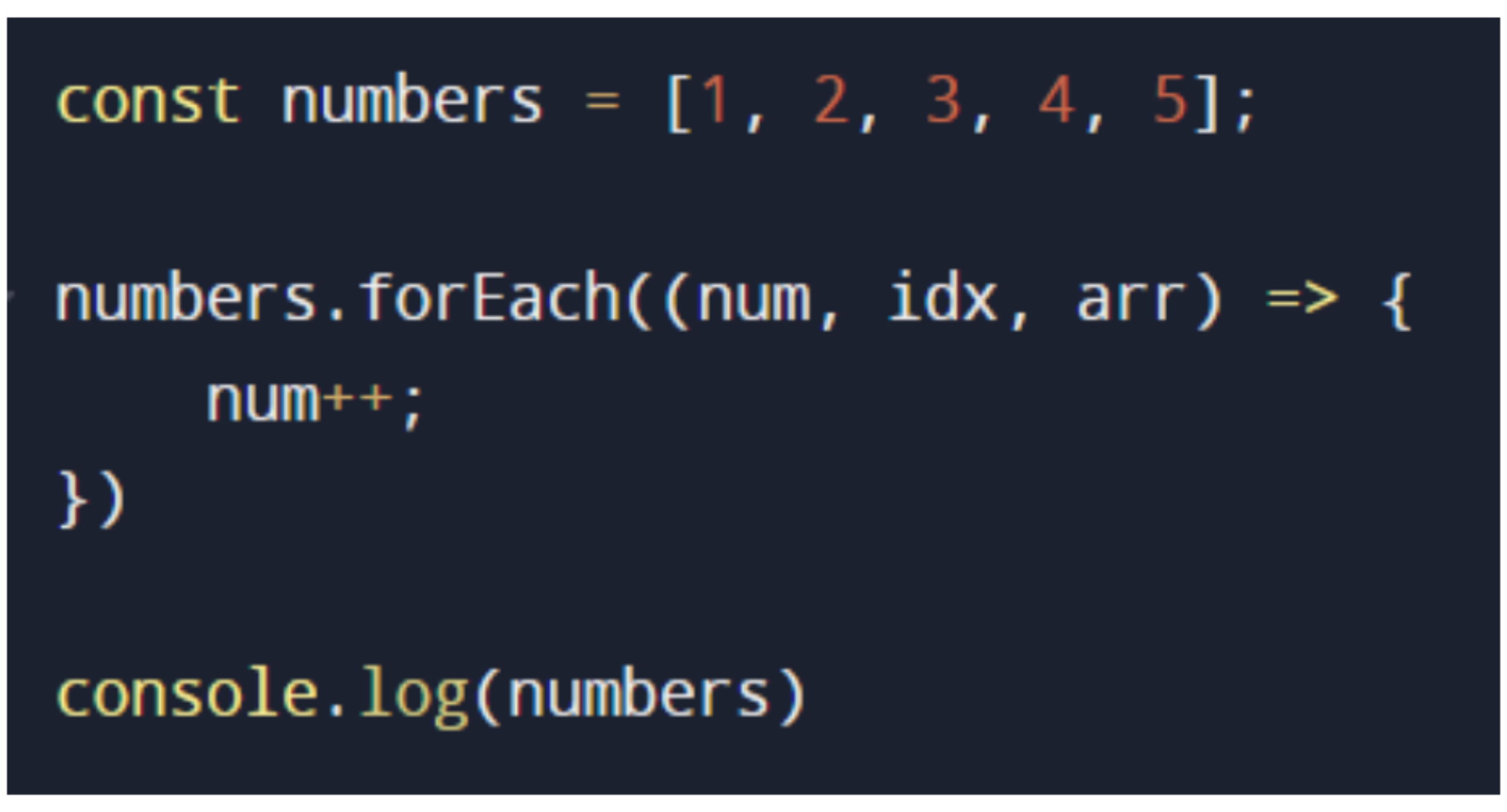
Section 1 - Recap

1 - Read about **for .. in** VS **for .. of** * 1 point

Choose the correct statement of the following

- ● For .. in loops are used to loop through enumerable objects (key-value types), while for .. of loops are used to loop through collections (like arrays)
- ○ For .. of loops are used to loop through enumerable objects (key-value types), while for .. in loops are used to loop through collections (like arrays)
- ○ Both types of loops can be used with enumerable objects (key-value types)
- ○ If a for .. in loop is used with a collection (like arrays) it will give an error

2 - What is the output of this code? * 1 point



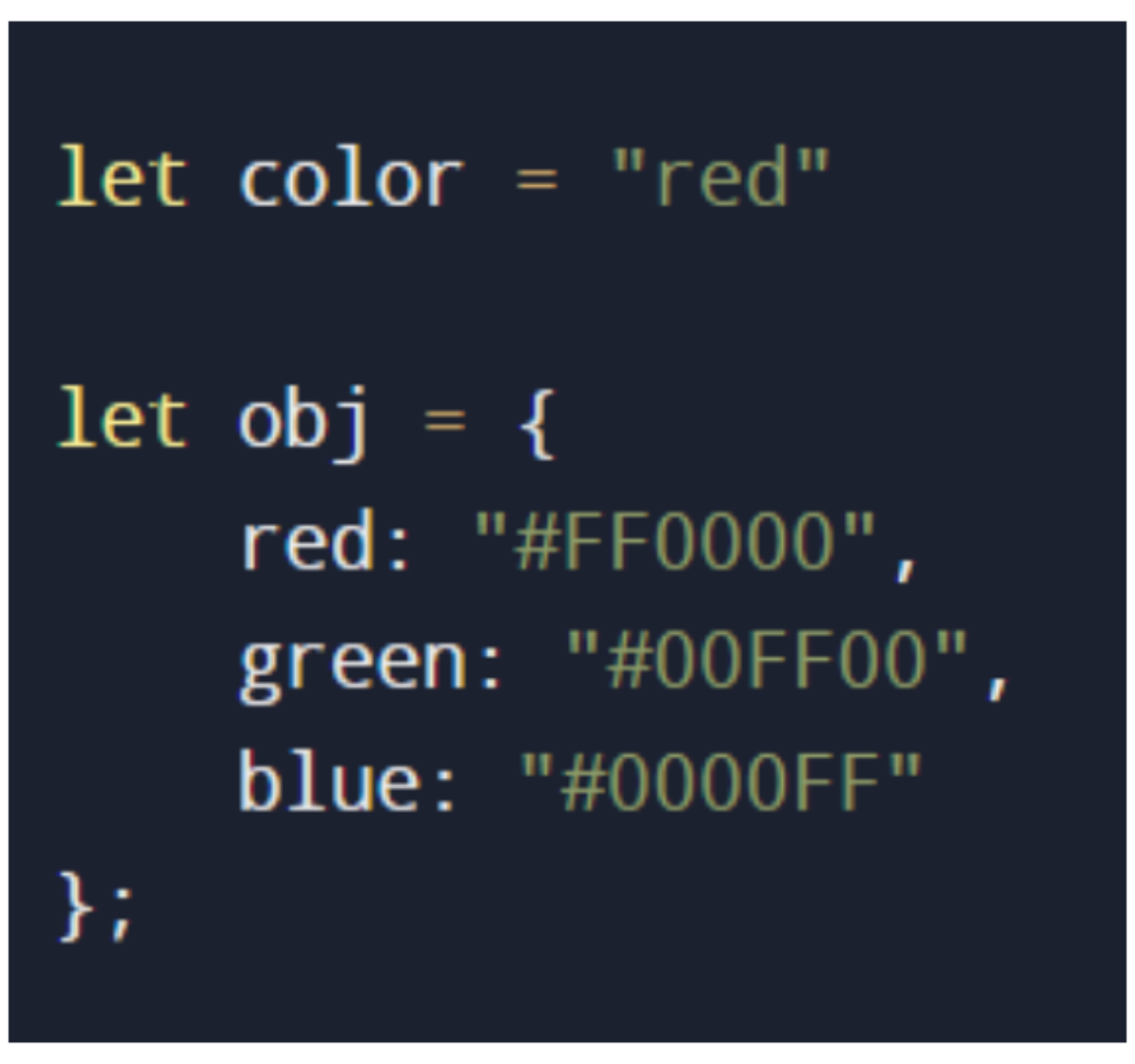
```
const numbers = [1, 2, 3, 4, 5];

numbers.forEach((num, idx, arr) => {
    num++;
})

console.log(numbers)
```

- ○ [2, 3, 4, 5, 6] because the ++ operator will be applied to all the array elements
- ○ [1, 2, 3, 4, 5] because the array is declared as "const" so changes inside forEach won't affect it
- ● [1, 2, 3, 4, 5] because "num" contains a value-type, so changing it won't change the original value in the array
- ○ [1, 2, 3, 4, 5] because the ++ operator returns the old value before the increment is applied

3 - What command can be used to change the commit message of the last commit in Git? * 1 point

- ○ git update -m "New message"
- ● git commit --amend -m "New message"
- ○ git ammend -m "New message"
- ○ git commit --am "New message"

4 - Which of the following expressions will return the hexadecimal code of red color? * 1 point



```
let color = "red"

let obj = {
    red: "#FF0000",
    green: "#00FF00",
    blue: "#0000FF"
};
```

- ○ obj.color
- ● obj[color]
- ○ obj["color"]
- ○ obj[red]

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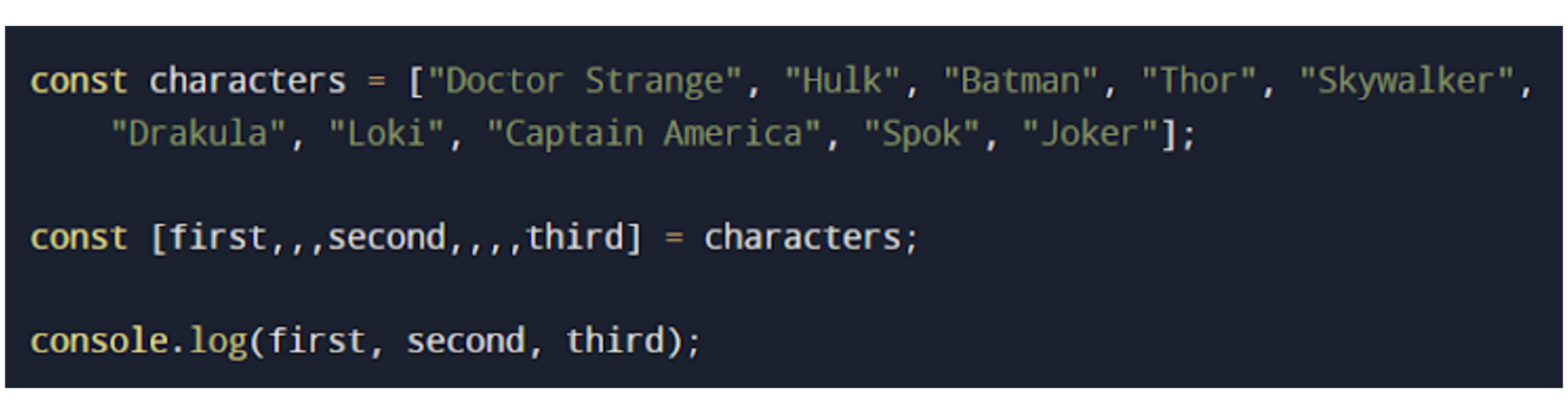
Section 2 - Wait for it

5 - Which of the following quantifiers specifies that the preceding character must appear one or more times in a regular expression? * 1 point

○ *
○ ?
● +
○ ~

6 - What is the output of the following? * 1 point



```
const characters = ["Doctor Strange", "Hulk", "Batman", "Thor", "Skywalker",
    "Drakula", "Loki", "Captain America", "Spok", "Joker"];

const [first,,,second,,,,third] = characters;

console.log(first, second, third);
```

○ Doctor Strange Hulk Batman
○ Doctor Strange Skywalker Spok
● Doctor Strange Thor Captain America
○ Doctor Strange Drakula undefined
○ SyntaxError

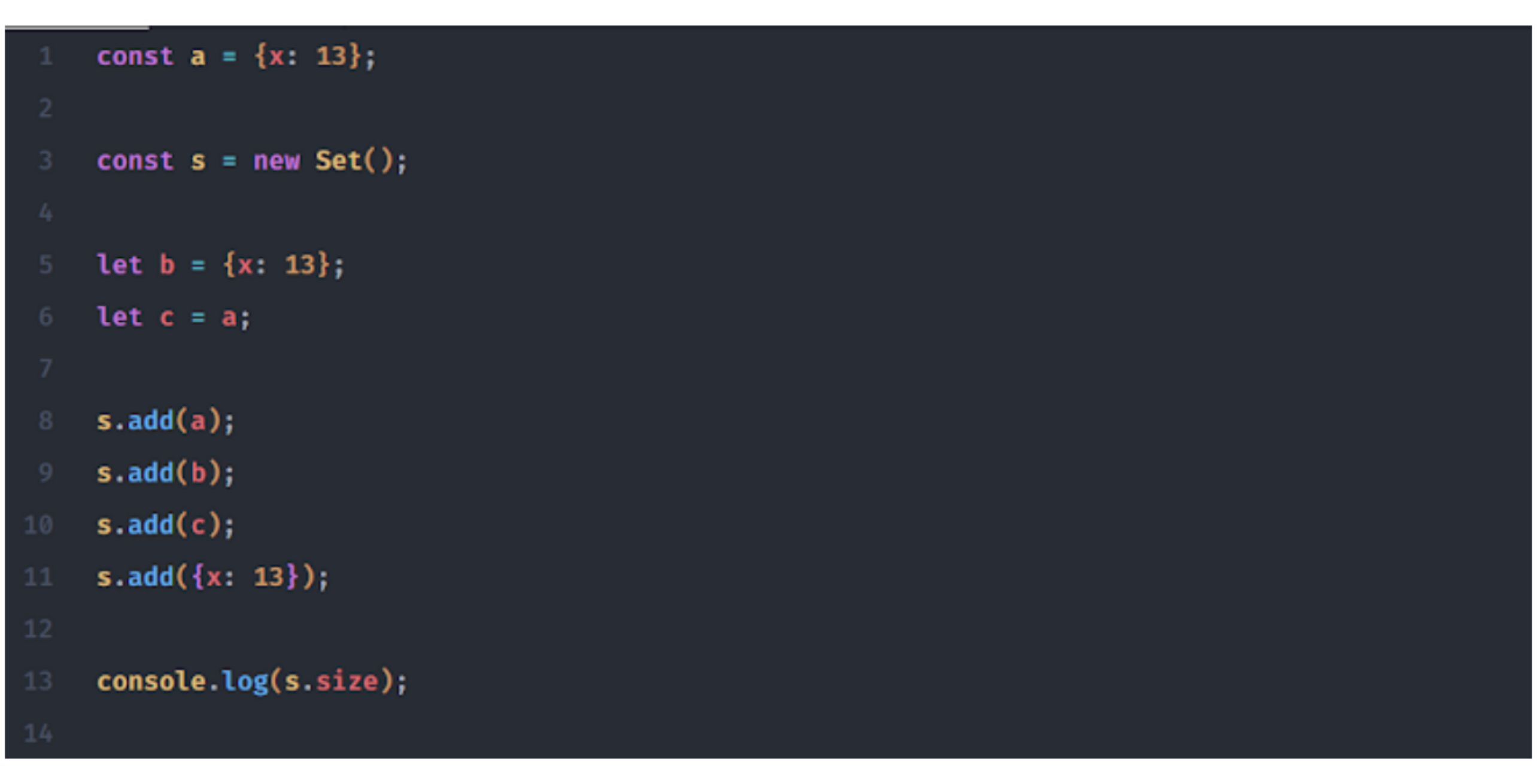
7 - Use the given table to compare between **Map** and **WeakMap** * 4 points

	Map	WeakMap
Key must be an object	○	●
You can loop through it	●	○
If an object is deleted, the key referring it is removed	○	●
You can't get its size	○	●

8 - You can iterate through the set using ...... * 1 point

○ forEach only
● iterator or forEach
○ iterator only
○ you cannot iterate through sets in JavaScript

9 - What is the output? * 1 point



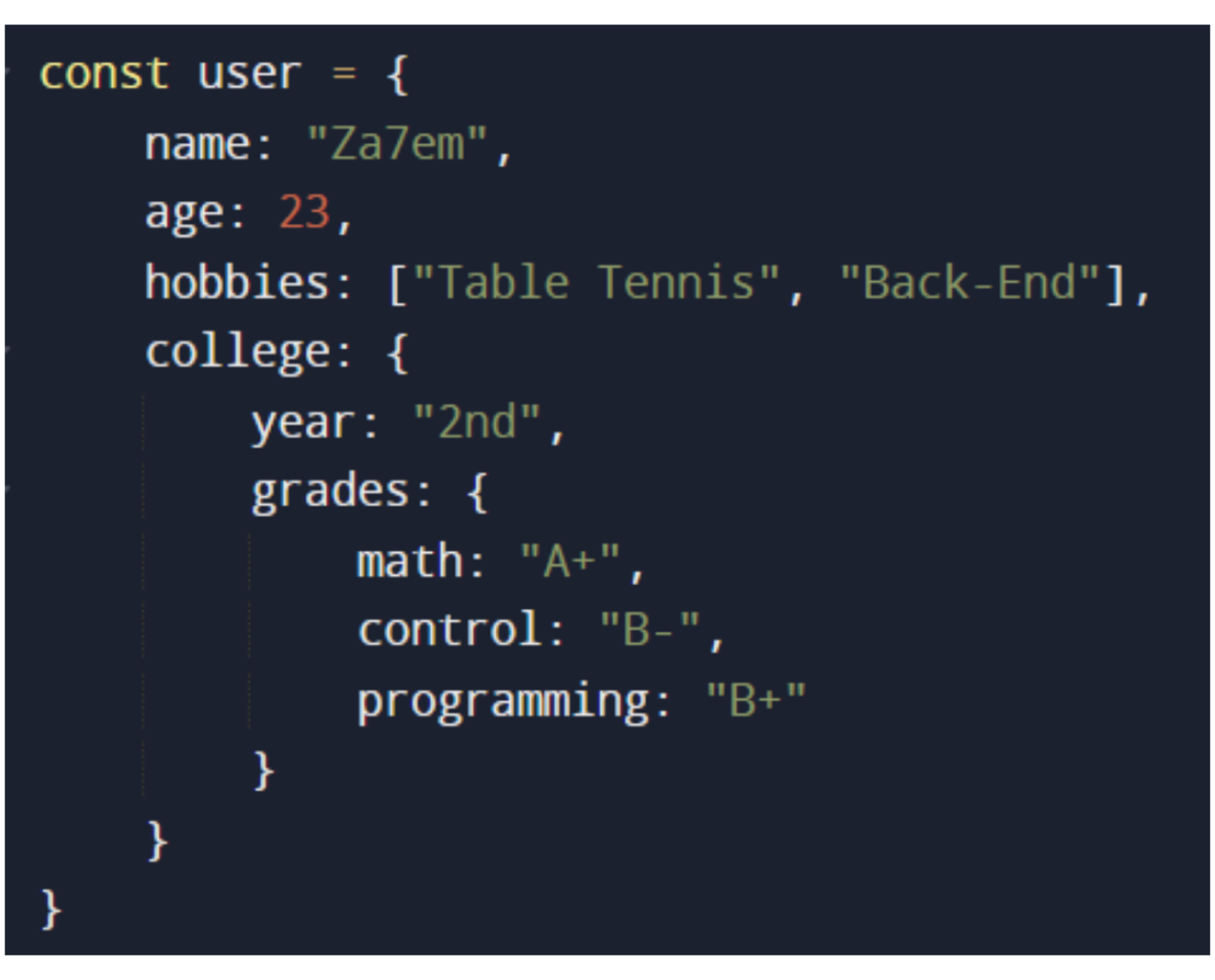
```
const a = {x: 13};

const s = new Set();

let b = {x: 13};
let c = a;

s.add(a);
s.add(b);
s.add(c);
s.add({x: 13});

console.log(s.size);

```

○ 4
● 3
○ 2
○ 1

10 - Which of the following is **NOT** a use case for regular expressions * 1 point

○ Checking that a password has 8 or more letters.
○ Checking if an email is valid.
○ Checking if an array contains a specific name.
● Checking if a number is higher than 7.

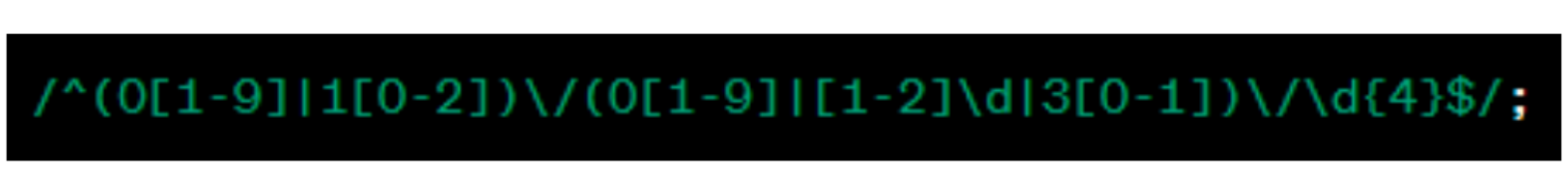
11 - Use object and array destructing to get the values: **"Back-End"** and **"B-"**. * 1 point
Your solution should be 2 lines of code maximum.



```
const user = {
    name: "Za7em",
    age: 23,
    hobbies: ["Table Tennis", "Back-End"],
    college: {
        year: "2nd",
        grades: {
            math: "A+",
            control: "B-",
            programming: "B+"
        }
    }
}
```

const {hobbies: [, backend], college: {grades: {control}}} = user;
console.log(backend, control);

12 - Write a string whose value matches this regular expression * 1 point

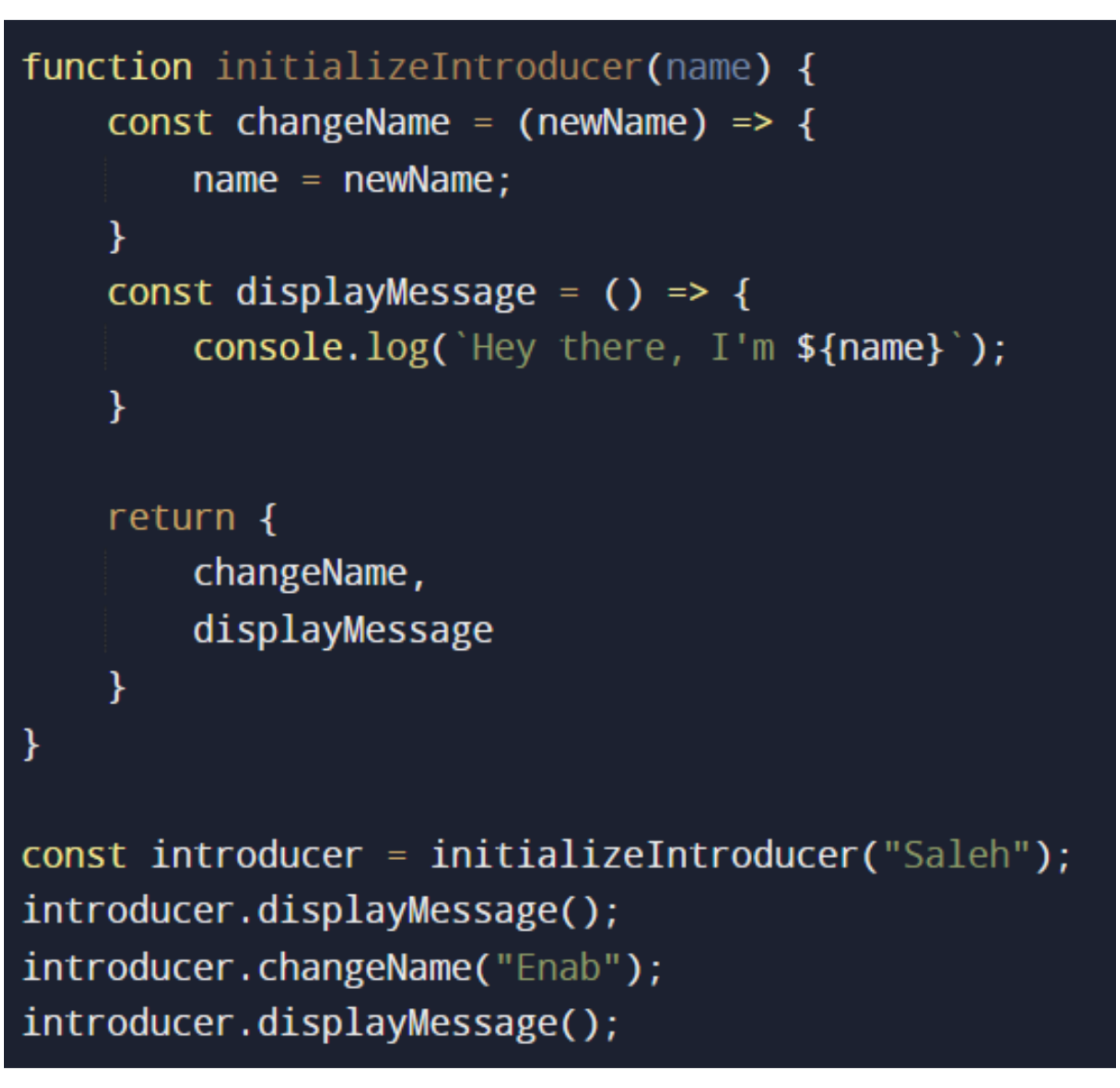


```
/^(0[1-9]|1[0-2])\/(0[1-9]|[1-2]\d|3[0-1])\/\d{4}$/;
```

10/01/2004

13 - Choose all applicable statements to the following code * 1 point

Hint: Read this



```
function initializeIntroducer(name) {
    const changeName = (newName) => {
        name = newName;
    }
    const displayMessage = () => {
        console.log(`Hey there, I'm ${name}`);
    }

    return {
        changeName,
        displayMessage
    }
}

const introducer = initializeIntroducer("Saleh");
introducer.displayMessage();
introducer.changeName("Enab");
introducer.displayMessage();
```

☑ This example demonstrates the usage of closures to implement encapsulation
☐ The code will output "Hey there, I'm Saleh" twice
☑ The function initializeIntroducer() returns an object
☑ The two functions still have access to the "name" variable because of closure
☐ The function initializeIntroducer() calls the function displayMessage() immediately

You have an object **player** and you need to make a copy of this object with two additional properties: * 1 point

score: 50,
position: 'ST'

use spread operator to implement this in one line

let new_p = {...player, score: 50, position: 'ST'};

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Coding Tasks

Coding Task 01

* 4 points

Write a function that takes an array of items, filters all elements starting with **hand** and ending with **s** or **y** or **le** *(case insensitive)*. There may be other characters in between.
Tip: Use Regular Expressions

Example:
Input:
['handOn', 'hands', 'hanDLes', 'Handcuffs', 'handmade', 'in-hands', 'HANDINGLY']
Output:
['hands', 'hanDLes', 'Handcuffs', 'HANDINGLY']

Put your solution on https://ideone.com/ and paste the link below.

https://ideone.com/XOKFpP

Coding Task 02

* 4 points

Solve the following 4 problems and provide the submission links:

[Problem - 1](#)
[Problem - 2](#)
[Problem - 3](#)
[Problem - 4](#)

Hint: to throw an error in JavaScript use:
throw new Error("error message");

https://leetcode.com/problems/create-hello-world-function/submissions/1590963420
https://leetcode.com/problems/counter/submissions/1591550748
https://leetcode.com/problems/to-be-or-not-to-be/submissions/1591578427
https://leetcode.com/problems/counter-ii/submissions/1591581377

Coding Task 03

* 5 points

Solve this problem

[Chat System?](#)

upload your code to [ideone](#) the paste the link below.

https://ideone.com/9G3UUO

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