JavaScript Code Challenge Questions (30 Total)

Section 1: console.log & Comments

1. Write a line of JavaScript that prints "Hello JavaScript World" to the console.
2. Write a single-line comment and a multi-line comment explaining your code.
3. Write code that logs your name, age, and country in one line.
4. What will be printed by this code?
5. `console.log("5" + 5);`
6. Predict and test the output:
7. `console.log(10 + 20 + "30");`

Section 2: var, let, const

6. Declare a variable `x` using `var` and assign it a value of 5. Then redeclare it with a new value of 10 and log the result.
7. Try the same operation using `let` instead of `var`. What happens?
8. Create a constant `PI` with the value `3.14`. Try changing its value and see the error.
9. Write a code snippet showing the difference between **global scope** and **block scope** using `var` and `let`.
10. Which of these will throw an error?

```
const city = "Paris";
city = "London";
```

Section 3: Data Types

11. Declare five variables of types: `number`, `string`, `boolean`, `undefined`, and `null`.
12. Write a `console.log()` that prints the type of each variable using `typeof`.
13. Predict and check the output:

```
console.log(typeof null);
```

14. Create an array called `colors` with three string values and print the second color.
15. Create an object `person` with keys: `name`, `age`, and `job`. Log both the object and one of its properties.

Section 4: Arithmetic Operators

16. Write code that calculates and logs the result of `(15 + 3) * 2 - 8 / 4`.
17. Use `%` (modulus) to check if a number is even or odd.
18. Write a short program that takes two numbers `a` and `b` and prints their sum, difference, and product.
19. Predict the output:

```
console.log(5 + 10 * 2);
```

20. Increment a variable by 1 in three different ways.

Section 5: Assignment Operators

21. Write code that uses `+=`, `-=`, `*=`, `/=`, and `%=` on a variable `num = 10`.

22. What is the final value of `x`?

```
let x = 5;
x += 10;
x -= 3;
x *= 2;
console.log(x);
```

23. Show how to concatenate two strings using the `+=` operator.

24. Use the `**=` operator to square a number.

Section 6: Comparison Operators

25. What's the difference between `==` and `===`? Show it using an example.

26. Predict the output:

```
console.log(5 == "5");
console.log(5 === "5");
```

27. Write a condition that checks if a number is greater than 10 and less than 50.

28. What will be the result of:

```
console.log(10 != "10");
console.log(10 !== "10");
```

Section 7: Logical & String Operators

29. Use logical operators to check if a variable `age` is between 18 and 60 inclusive.

30. Combine two strings `"JavaScript"` and `"is fun"` using both `+` and template literals `` `${}` ``.