📓 Set 1: React: Variables & Operators & Statements

🔷 1. JavaScript Variables

1. What will be the output?

```
var x = 5;
let y = 10;
const z = x + y;
x = 15;
console.log(z);
```

1. Predict the output:

```
let a;
console.log(typeof a);
a = null;
      console.log(typeof a);
```

1. What's the error here?

```
const name;
name = "Krishna";
```

1. What's the scope of `let` inside a block?

```
{
  let a = 10;
```

```
  }
  console.log(a);
```

1. What will be printed?

```
  var x = "10";
  var y = 10;
  console.log(x == y);
  console.log(x === y);
```

---

2. Conditional Statements

1. What will this code output?

```
let temp = 25;
if (temp < 30) console.log("Cool Day");
else console.log("Hot Day");
```

1. Output?

```
let age = 17;
if (age ≥ 18) {
  console.log("Adult");
} else {
  console.log("Minor");
}
```

1. What is the issue?

```
let score = 85;
if score > 80 {
  console.log("Excellent");
}
```

1. Can `if` run without `{}`?

```
let status = "success";
if (status === "success")
  console.log("Passed");
  console.log("Done");
```

1. Will it print anything?

```
if (false) {
  console.log("This will print?");
}
```

---

3. Operators

1. What will be the result?

```
console.log(3 + 4 + "5");
```

1. Predict output:

```
console.log("10" - 2 + 1);
```

1. Identify the error or output:

```
let a = 5;
a += 3 * 2;
console.log(a);
```

1. What's the type?

```
console.log(typeof (4 + "2"));
```

1. Logical output:

```
console.log(10 > 5 > 2);
```

🔷 4. Ternary Operators

1. Rewrite using ternary:

```
let age = 20;
let result;
if (age ⩾ 18) result = "Adult";
else result = "Minor";
```

1. What does this return?

```
let x = 10;
let y = 20;
let msg = (x > y) ? "X is bigger" : "Y is bigger";
console.log(msg);
```

1. Nested ternary result:

```
let score = 85;
let grade = (score > 90) ? "A" : (score > 75) ? "B" : "C";
console.log(grade);
```

1. Correct output?

```
let user = "";
let status = user ? "Logged in" : "Guest";
console.log(status);
```

1. Use ternary to assign even or odd:

```
let n = 7;
let type = (n % 2 ⩵ 0) ? "Even" : "Odd";
```

🔷 5. Logical Operators

1. What will be printed?

```
console.log(true && false || true);
```

1. Guess the output:

```
let a = 0;
let b = 1;
console.log(a && b);
```

1. Output?

```
let isAdmin = false;
let isLoggedIn = true;
if (isLoggedIn && isAdmin) console.log("Welcome Admin");
else console.log("Access Denied");
```

1. Find the bug:

```
let active = true;
if (!active) {
  console.log("Inactive");
}
```

1. What's the output?

```
let x = 5;
console.log(x > 3 || x < 2);
```

🔷 6. if statement

1. Output?

```
let a = 10;
if (a % 2 === 0) console.log("Even Number");
```

1. Guess:

```
let status = "inactive";
if (status) console.log("Valid");
```

1. Will this run?

```
if ("") console.log("Empty");
```

1. Error or not?

```
if (null) {
  console.log("Null works?");
}
```

1. Fix it:

```
if a > 0 {
  console.log("Positive");
}
```

---

7. if-else

1. What prints?

```
let marks = 40;
if (marks > 50) console.log("Pass");
else console.log("Fail");
```

1. Will it run?

```
let isOnline = false;
if (isOnline) console.log("Online");
else console.log("Offline");
```

1. Rewrite using if-else:

```
let temp = 35;
// if temp ⩾ 30 → "Hot", else → "Cool"
```

1. Predict:

```
let num = 0;
if (num) console.log("True");
else console.log("False");
```

1. Bug?

```
let loggedIn = "yes";
if (loggedIn ⩵ true) console.log("Login Success");
else console.log("Login Fail");
```

🔷 8. if-else-if

1. What is printed?

```
let grade = 75;
if (grade > 90) console.log("A");
else if (grade > 70) console.log("B");
else console.log("C");
```

1. Output?

```
let weather = "cloudy";
if (weather ⩵ "rainy") console.log("Take umbrella");
```

```
else if (weather === "sunny") console.log("Wear sunglasses");
else console.log("Normal day");
```

1. Bug?

```
if (x > 10) console.log("Big");
else if (x > 5) console.log("Medium");
else console.log("Small");
```

1. Missing part?

```
let speed = 100;
if (speed > 120) console.log("Too fast");
else if (speed > 80) console.log("Fast");
```

1. Write logic:

```
let score = 55;
// if > 90 → A, > 75 → B, > 60 → C, else D
```

---

9. do-while loop

1. Output?

```
let i = 1;
do {
  console.log(i);
  i++;
} while (i <= 3);
```

1. Runs how many times?

```
let i = 5;
do {
```

```
  console.log("Running");
} while (i < 3);
```

1. Infinite loop?

```
let i = 1;
do {
  console.log(i);
  // missing increment
} while (i < 5);
```

1. Fix it to print 1 to 5
2. Convert this to `while`:

```
do {
  console.log("Hello");
} while (false);
```

---

10. for loop

1. Print all even numbers from 1 to 10 using for loop.
2. Output?

```
for (let i = 3; i ⩾ 0; i--) {
  console.log(i);
}
```

1. Missing part?

```
for (let i = 0; i < 5;) {
  console.log(i);
  i++;
}
```

1. Loop with array:

```
let arr = [1,2,3];
for (let i = 0; i < arr.length; i++) {
  console.log(arr[i]);
}
```

1. Predict:

```
for (let i = 0; i < 3; i++) {
  if (i === 1) continue;
  console.log(i);
}
```