# JavaScript 1

1. **Name the three ways to declare a variable?**
   - var
   - let
   - const
2. **Which of the three variable declarations should you avoid and why?**
   The var declaration because it is rather a keyword which defines a variable globally regardless of block scope.
3. **What rules should you follow when naming variables?**
   - The name must contain only letters, digits, or the symbols $ and _
   - The first character must not be a digit.
4. **What should you look out for when using the + operator with numbers and strings?**
   You need to look out if the two variables are strings or numbers. If the two variables are strings the + will add them together, for ex
   let a = "My name is ";
   let b = "Bob";
   let c = a + b;
   will return (My name is Bob)
   If you have a + between a number and a string the console will display NaN result.
5. **How does the % operator work?**
   The % is a Modulus (Division Remainder), it takes to variables divided by each other and displays the remainder value, for ex
   let x = 15;
   let y = 4;
   let z = x % y;
   will display 3
6. **Explain the difference between == and ===.**
   The == is the equality text that tests if two variables are equal to each other and converts the two variables to numbers. The === is a strict equality operator that checks the equality without type conversion.
7. **When would you receive a NaN result?**
   You will receive NaN result with an incorrect or an undefined mathematical operation.
8. **How do you increment and decrement a number?**
   To increment a number you use the increment operator (++) and to decrement a number you use the decrement operator (--)
9. **Explain the difference between prefixing and post-fixing increment/decrement operators.**
   Postfix decrement operator means the expression is evaluated first using the original value of the variable and then the variable is decremented(decreased). Prefix increment operator means the variable is incremented first and then the expression is evaluated using the new value of the variable.
10. **What is operator precedence and how is it handled in JS?**
    Operator precedence determines how operators are parsed concerning each other. Operators with higher precedence become the operands of operators with lower precedence.

11. **How do you log information to the console?**
    By using console.log()
12. **What does unary plus operator do to string representations of integers?**
    The unary plus ( + ) operator is the fastest (and preferred) method of converting something into a number. It can convert: string representations of integers (decimal or hexadecimal) and floats.
13. **What are the eight data types in JavaScript?**
    - Strings
    - Numbers
    - Booleans
    - Arrays
    - Objects
    - Operator
    - Undefined
    - Null
14. **Which data type is NOT primitive?**
    Object type is not primitive because an object is used to store collections of data and more complex entities.
15. **What is the relationship between null and undefined?**
    Undefined is a type, whereas null an object. It means a variable declared, but no value has been assigned a value. Whereas, null in JavaScript is an assignment value. You can assign it to a variable.
16. **What is the difference between single, double, and backtick quotes for strings?**
    Double and single quotes are “simple” quotes. There’s practically no difference between them in JavaScript. Backticks are “extended functionality” quotes. They allow us to embed variables and expressions into a string by wrapping them in ${…}.
17. **What is the term for embedding variables/expressions in a string?**
    String interpolation is the process of embedding an expression into part of a string.
18. **Which type of quote lets you embed variables/expressions in a string?**
    Backticks quote``
19. **How do you embed variables/expressions in a string?**
    By inserting ${…} inside the string
20. **How do you escape characters in a string?**
    By using the \ to escape the characters in a string.
21. **What is the difference between the slice/substring/substr string methods?**
    slice() extracts parts of a string and returns the extracted parts in a new string. substr() extracts parts of a string, beginning at the character at the specified position, and returns the specified number of characters. substring() extracts parts of a string and returns the extracted parts in a new string.

22. **What are the three logical operators and what do they stand for?**

| 1. Operator | 2. Description | 3. Example |
|---|---|---|
| 5. && | 6. and | 7. (x < 10 && y > 1) is true |
| 9. \|\| | 10. or | 11. (x == 5 \|\| y == 5) is false |
| 13. ! | 14. not | 15. !(x == y) is true |

23. **What are the comparison operators?**
    Comparison operators are used in logical statements to determine equality or difference between variables or values.
    Operators
    == equal to
    === equal value and equal type
    != not equal
    !== not equal value or not equal type
    > greater than
    < less than
    >= greater than or equal to
    <= less than or equal to
24. **What are truthy and falsy values?**
    A truthy value is a value that is considered true when encountered in a Boolean context. All values are truthy unless they are defined as falsy. That is, all values are truthy except false , 0 , -0 , 0n , "" , null , undefined , and NaN.
25. **What are the falsy values in JavaScript?**
    0 , -0 , 0n , "" , null , undefined , and NaN
26. **What are conditionals?**
    Conditional statements control behavior in JavaScript and determine whether or not pieces of code can run. There are multiple different types of conditionals in JavaScript including:
    "If" statements: where if a condition is true it is used to specify execution for a block of code.
27. **What is the syntax for an if/else conditional?**

```
if (time < 10) {
    greeting = "Good day";
} else {
    greeting = "Good day";
}
```

28. **What is the syntax for a switch statement?**

```
switch (new Data().getDay()) {
  case 0:
    day = "Sunday";
    break;
  case 1:
    day = "Monday";
    break;
  case 2:
    day = "Tuesday";
    break;
  case 3:
    day = "Wednesday";
    break;
  case 4:
    day = "Thursday";
    break;
  case 5:
    day = "Friday";
    break;
  case 6:
    day = "Saturday";
}
```

29. **What is the syntax for a ternary operator?**

```
function getFee(isMember) {
  return (isMember ? '$2.00' : '$10.00');
}
```

30. **What is nesting?**

    Nesting is when you write something inside of something else. You can have a function inside of another function: function x () { function y() { // something; } } You can have an if condition inside of another if condition: if (daylight) { if (before 12) { //It's morning; } else { // it's afternoon; } }

31. **What are functions useful for?**

    A function allows you to define a block of code, give it a name and then execute it as many times as you want.

32. **How do you invoke a function?**

    - Invoking a Function as a Function: function myFunction( var ) { return var; } myFunction( value );

    - Invoking a Function as a Method: var myObject = { var : value, functionName: function () { return this. var; } } myObject. functionName();

33. **What are anonymous functions?**

    Anonymous Function is a function that does not have any name associated with it.

34. **What is function scope?**

    Each function creates a new scope. Variables defined inside a function are not accessible (visible) from outside the function. Variables declared with var , let and const are quite similar when declared inside a function. They all have Function Scope: function myFunction() {

35. **What are return values?**
    The return statement stops the execution of a function and returns a value.
36. **What are arrow functions?**
    An arrow function is a simple and concise syntax for creating functions, that's often better than Function Expressions.