
EXAMPLE 3- JAVASCRIPT

1. JS primitive types: Execute the following exercises using the console log and explain the results

- a.

```
var x = 5 + 2 + 3;
var x = "Juan" + " " + "Antonio";
var x = 2 + 3 + "5"
var nombre = "Juan";
var nombre;
```
- b.

```
let colors = new Object();
colors.favourite = 'blue';
let myColors = colors;
myColors.favourite = 'red';
```
- c.

```
let first_greet = "hello";
let second_greet = first_greet;
first_greet = "hi";
```
- d.

```
console.log ('var1 value is: ' + var1);
var2 = null;
console.log ('var2 value is: ' + var2);
let var1 = 55.55;
var1 = var1 + 10;
console.log ('var1 value is: ' + var1);
console.log ('The double of var1 is: ' + (var1*2));
var3 = 10;
console.log ('The result of multiplying var1 by var3 is: ' + (var1*var3));
var1 = 'This is a text';
console.log ('var1 value is: ' + var1);
console.log ('The double of var1 is now: ' + (var1*2));
console.log var1 = 99.55;
console.log ('var1 has been declared again and its value is now: ' + var1);
let $var4 = 0.55;
console.log ('$var4 value is: ' + $var4);
```
- e.

```
let stars= 5.555, text1 = 'stars in the sky';
let infiniteNumber = Infinity;
console.log ('stars var value is: ' + stars);
stars= 5.555E5;
console.log ('stars var value is (multiplied by 100000): ' + stars);
stars = 5.555E-5;
console.log (' stars var value is now a very small number: ' + stars);
console.log ('stars var value is (Nonsense): ' + stars*text1);
stars = 5.555e1000000000000000000;
console.log ('stars var value is now too big: ' + stars);
```

```

stars = 5.555E-1000000000000000000; alert('stars var value is now too small: ' +
stars);
console.log ('A positive number divided by 0 returns: ' + (5/0));
console.log (' A negative number divided by 0 returns: ' + (-5/0));
console.log ('Zero divided by zero returns: ' + (0/0));
console.log ('infiniteNumber var value is: ' + infiniteNumber);
let tenCents = .1; let twentyCents = .2; let thirtyCents = .3;
console.log ('0.2-0.1 equals: ' + (twentyCents-tenCents));
console.log ('0.3-0.2 equals: ' + (thirtyCents-twentyCents)); //Find out why

```

2. JS variables: Execute the following scripts and explain the results:

- a.

```

let userText;
userText = prompt("Introduce any text:");
alert ("The text introduced is <" + userText + "> and has a length of " +
userText.length + " chars");
alert ("The length of \"extraordinaire\" is " + ("extraordinaire".length) + "
chars");
alert ("The length of an empty text is " + ("".length) + " chars");

```
- b.

```

let num1 = 2200;
let num2 = 0234;
let num3 = 0x2A9F;
console.log (num1 + "\n" + num2 + "\n" + num3);

```

3. Types: Find out the type of each value using the operator typeof:

- "Pedro"
- NaN
- false
- [0,1,2,3,4,5]
- {nombre:"Pedro",edad:25}
- 3.1415
- new Date()
- nombre
- 25
- 'Juan'

4. JS operators: Execute the following scripts and explain the result:

- a.

```

let dividend = prompt("Dividend: ");
let divisor = prompt("Divisor ");
let result=null;
divisor != 0 ? result=dividend/divisor:alert("Error: Division by zero");
alert("The result is: " + result);

```
- b.

```

console.log (typeof undefined);
console.log (typeof null);
console.log (null === undefined);
console.log (null == undefined);

```
- c.

```

let a, b, c, d, myText; a = 3; b = 5; c = true; d = false; myText = '1';
console.log (' a+b == 8 && a-b ==1 is: ' + (a+b == 8 && a-b ==1));

```

```

console.log ('a+b == 8 && a-b ==-2 is: ' + (a+b == 8 && a-b ==-2));
console.log (' c == d is: ' + (c==d));
console.log ('c&&d is: ' + (c&&d));
console.log (' c | d is: ' + (c | d));
console.log ('!a is: ' + (!a));
console.log (' myText === 1: ' + (myText === 1));
console.log (' myText == 1: ' + (myText == 1));
console.log ('Juice < Water is: ' + ('Juice'<'Water'));

```

d. `let a = NaN, b = NaN;`
`console.log ((a == b) + "\n" + (a === b) + "\n" + (a !== a));`

5. Type conversion: Execute the following scripts and explain the result:

a. `console.log ('' == '0')`
`console.log (0 == '')`
`console.log (0 == '0')`
`console.log (false == 'false')`
`console.log (false == '0')`
`console.log (false == undefined)`
`console.log (false == null)`
`console.log (null == undefined)`
`console.log (' \t\r\n ' == 0)`
`console.log ("0" == true)`
`console.log ("0.1e1" == true)`

b. `let number1_1 = 5;`
`let number2_1 = 6;`
`let number3_1 = parseInt("10");`
`let number1_2 = 5;`
`let number2_2 = 6;`
`let number3_2 = parseFloat("10.25");`
`console.log ((number1_1 + number2_1 + number3_1)`
`console.log (number1_2 + number2_2 + number3_2))`

6. Some more exercises with variables:

https://www.w3schools.com/js/js_variables.asp