

**n** Number() = 42

## PROPERTIES

- n**.POSITIVE\_INFINITY +∞ equivalent
- n**.NEGATIVE\_INFINITY -∞ equivalent
- n**.MAX\_VALUE largest positive value
- n**.MIN\_VALUE smallest positive value
- n**.EPSILON diff between 1 & smallest >1
- n**.NaN not-a-number value

## METHODS

- s**.toExponential(**dec**) exp. notation
- s**.toFixed(**dec**) fixed-point notation
- s**.toPrecision(**p**) change precision
- b**.isFinite(**n**) check if number is finite
- b**.isInteger(**n**) check if number is int.
- b**.isNaN(**n**) check if number is NaN
- n**.parseInt(**s**, **radix**) string to integer
- n**.parseFloat(**s**, **radix**) string to float

**r** Regexp() = /.+/ig

## PROPERTIES

- n**.lastIndex index to start global regexp
- s**.flags active flags of current regexp
- b**.global flag g (search all matches)
- b**.ignoreCase flag i (match lower/upper)
- b**.multiline flag m (match multiple lines)
- b**.sticky flag y (search from lastIndex)
- b**.unicode flag u (enable unicode feat.)
- s**.source current regexp (w/o slashes)

## METHODS

- a**.exec(**str**) exec search for a match
- b**.test(**str**) check if regexp match w/str

## CLASSES

- . any character \t tabulator
- \d digit [0-9] \r carriage return
- \D no digit [^0-9] \n line feed
- \w any alphanumeric char [A-Za-z0-9\_]
- \W no alphanumeric char [^A-Za-z0-9\_]
- \s any space char (space, tab, enter...)
- \S no space char (space, tab, enter...)
- \xN char with code N [b] backspace
- \uN char with unicode N \0 NUL char

## CHARACTER SETS OR ALTERNATION

- [abc] match any character set
- ^[abc] match any char. set not enclosed
- a|b match a or b

## BOUNDARIES

- ^ begin of input \$ end of input
- \b zero-width word boundary
- \B zero-width non-word boundary

## GROUPING

- (x) capture group (?x) no capture group
- \n reference to group n captured

## QUANTIFIERS

- x\* preceding x 0 or more times {0,}
- x+ preceding x 1 or more times {1,}
- x? preceding x 0 or 1 times {0,1}
- x{n} n occurrences of x
- x{n,} at least n occurrences of x
- x{n,m} between n & m occurrences of x

## ASSERTIONS

- x(=?y) x (only if x is followed by y)
- x(?!y) x (only if x is not followed by y)

**s** String() = 'text'

## PROPERTIES

- n**.length string size

## METHODS

- s**.charAt(**index**) char at position [i]
- n**.charCodeAt(**index**) unicode at pos.
- s**.fromCharCode(**n1**, **n2**...) code to char
- s**.concat(**str1**, **str2**...) combine text +
- b**.startsWith(**str**, **size**) check beginning
- b**.endsWith(**str**, **size**) check ending
- b**.includes(**str**, **from**) include substring?
- n**.indexOf(**str**, **from**) find substr index
- n**.lastIndexOf(**str**, **from**) find from end
- n**.search(**regex**) search & return index
- n**.localeCompare(**str**, **locale**, **options**)
- a**.match(**regex**) matches against string
- s**.repeat(**n**) repeat string n times
- s**.replace(**str**|**regex**, **newstr**|**func**)
- s**.slice(**ini**, **end**) str between ini/end
- s**.substr(**ini**, **len**) substr of len length
- s**.substring(**ini**, **end**) substr fragment
- a**.split(**sepl**|**regex**, **limit**) divide string
- s**.toLowerCase() string to lowercase
- s**.toUpperCase() string to uppercase
- s**.trim() remove space from begin/end
- s**.raw`` template strings with \${vars}

**d** Date()

## METHODS

- n**.UTC(**y**, **m**, **d**, **h**, **i**, **s**, **ms**) timestamp
- n**.now() timestamp of current time
- n**.parse(**str**) convert str to timestamp
- n**.setTime(**ts**) set UNIX timestamp
- n**.getTime() return UNIX timestamp

## UNIT SETTERS (ALSO .setUTC\*() methods)

- n**.setFullYear(**y**, **m**, **d**) set year (yyyy)
- n**.setMonth(**m**, **d**) set month (0-11)
- n**.setDate(**d**) set day (1-31)
- n**.setHours(**h**, **m**, **s**, **ms**) set hour (0-23)
- n**.setMinutes(**m**, **s**, **ms**) set min (0-59)
- n**.setSeconds(**s**, **ms**) set sec (0-59)
- n**.setMilliseconds(**ms**) set ms (0-999)

## UNIT GETTERS (ALSO .getUTC\*() methods)

- n**.getDate() return day (1-31)
- n**.getDay() return day of week (0-6)
- n**.getMonth() return month (0-11)
- n**.getFullYear() return year (yyyy)
- n**.getHours() return hour (0-23)
- n**.getMinutes() return minutes (0-59)
- n**.getSeconds() return seconds (0-59)
- n**.getMilliseconds() return ms (0-999)

## LOCALE &amp; TIMEZONE METHODS

- n**.getTimezoneOffset() offset in mins
- s**.toLocaleDateString(**locale**, **options**)
- s**.toLocaleTimeString(**locale**, **options**)
- s**.toLocaleString(**locale**, **options**)
- s**.toUTCString() return UTC date
- s**.toDateString() return American date
- s**.toTimeString() return American time
- s**.toISOString() return ISO8601 date
- s**.toJSON() return date ready for JSON

**a** Array() = [1, 2, 3]

## PROPERTIES

- n**.length number of elements

## METHODS

- b**.isArray(**obj**) check if obj is array
- b**.includes(**obj**, **from**) include element?
- n**.indexOf(**obj**, **from**) find elem. index
- n**.lastIndexOf(**obj**, **from**) find from end
- s**.join(**sep**) join elements w/separator
- a**.slice(**ini**, **end**) return array portion
- a**.concat(**obj1**, **obj2**...) return joined array

## MODIFY SOURCE ARRAY METHODS

- a**.copyWithin(**pos**, **ini**, **end**) copy elems
- a**.fill(**obj**, **ini**, **end**) fill array with obj
- a**.reverse() reverse array & return it
- a**.sort(**cf(a,b)**) sort array (unicode sort)
- a**.splice(**ini**, **del**, **o1**, **o2**...) del&add elem

## ITERATION METHODS

- a**.entries() iterate key/value pair array
- a**.keys() iterate only keys array
- a**.values() iterate only values array

## CALLBACK FOR EACH METHODS

- b**.every(**cb(e,i,a)**, **arg**) test until false
- b**.some(**cb(e,i,a)**, **arg**) test until true
- a**.map(**cb(e,i,a)**, **arg**) make array
- a**.filter(**cb(e,i,a)**, **arg**) make array w/true
- o**.find(**cb(e,i,a)**, **arg**) return elem w/true
- n**.findIndex(**cb(e,i,a)**, **arg**) return index
- o**.forEach(**cb(e,i,a)**, **arg**) exec for each
- o**.reduce(**cb(p,e,i,a)**, **arg**) accumulative
- o**.reduceRight(**cb(p,e,i,a)**, **arg**) from end

## ADD/REMOVE METHODS

- o**.pop() remove & return last element
- n**.push(**o1**, **o2**...) add element & return length
- o**.shift() remove & return first element
- n**.unshift(**o1**, **o2**...) add element & return len

**b** Boolean() = true / false

no own properties or methods

**f** Function() = function(a, b) { ... }

## PROPERTIES

- o**.length return number of arguments
- s**.name return name of function
- o**.prototype prototype object

## METHODS

- o**.call(**newthis**, **arg1**, **arg2**...) change this
- o**.apply(**newthis**, **arg1**) with args array
- o**.bind(**newthis**, **arg1**, **arg2**...) bound func

- n** number
- NaN** (not-a-number)
- s** string
- b** boolean (true/false)
- a** array
- d** date
- r** regular expression
- f** function
- o** object
- undefined**

only available on ECMAScript 6

- n** static (ex: Math.random())
- n** non-static (ex: new Date().getDate())
- argument** required
- argument** optional

## Math

## PROPERTIES

- E** Euler's constant
- LN2** natural logarithm of 2
- LN10** natural logarithm of 10
- LOG2E** base 2 logarithm of E
- LOG10E** base 10 logarithm of E
- PI** ratio circumference/diameter
- SQRT1\_2** square root of 1/2
- SQRT2** square root of 2

## METHODS

- abs(x)** absolute value
- cbrt(x)** cube root
- clz32(x)** return leading zero bits (32)
- exp(x)** return  $e^x$
- expm1(x)** return  $e^x - 1$
- hypot(x1, x2...)** length of hypotenuse
- imul(a, b)** signed multiply
- log(x)** natural logarithm (base e)
- log1p(x)** natural logarithm (1+x)
- log10(x)** base 10 logarithm
- log2(x)** base 2 logarithm
- max(x1, x2...)** return max number
- min(x1, x2...)** return min number
- pow(base, exp)** return  $base^{exp}$
- random()** float random number [0,1)
- sign(x)** return sign of number
- sqrt(x)** square root of number

## ROUND METHODS

- ceil(x)** superior round (smallest)
- floor(x)** inferior round (largest)
- fround(x)** nearest single precision
- round(x)** round (nearest integer)
- trunc(x)** remove fractional digits

## TRIGONOMETRIC METHODS

- acos(x)** arccosine
- acosh(x)** hyperbolic arccosine
- asin(x)** arcsine
- asinh(x)** hyperbolic arcsine
- atan(x)** arctangent
- atan2(x, y)** arctangent of quotient x/y
- atanh(x)** hyperbolic arctangent
- cos(x)** cosine
- cosh(x)** hyperbolic cosine
- sin(x)** sine
- sinh(x)** hyperbolic sine
- tan(x)** tangent
- tanh(x)** hyperbolic tangent

## JSON

## METHODS

- parse(str, tf(k,v))** parse string to object
- stringify(obj, repl[w], sp)** convert to str

## Error()

## PROPERTIES

- name** return name of error
- message** return description of error

**EvalError()**, **InternalError()**, **RangeError()**, **URIError()**,  
**ReferenceError()**, **SyntaxError()**, **TypeError()**

## Object() = {key: value, key2: value2}

## PROPERTIES

- .constructor** return ref. to object func.

## METHODS

- .assign(dst, src1, src2...)** copy values
- .create(proto, prop)** create obj w/prop
- .defineProperties(obj, prop)**
- .defineProperty(obj, prop, desc)**
- .freeze(obj)** avoid properties changes
- .getOwnPropertyDescriptor(obj, prop)**
- .getOwnPropertyNames(obj)**
- .getOwnPropertySymbols(obj)**
- .getPrototypeOf(obj)** return prototype
- .is(val1, val2)** check if are same value
- .isExtensible(obj)** check if can add prop
- .isFrozen(obj)** check if obj is frozen
- .isSealed(obj)** check if obj is sealed
- .keys(obj)** return only keys of object
- .preventExtensions(obj)** avoid extend
- .seal(obj)** prop are non-configurable
- .setPrototypeOf(obj, prot)** change prot

## INSTANCE METHODS

- .hasOwnProperty(prop)** check if exist
- .isPrototypeOf(obj)** test in another obj
- .propertyIsEnumerable(prop)**
- .toString()** return equivalent string
- .toLocaleString()** return locale version
- .valueOf()** return primitive value

## Promise()

## METHODS

- .all(obj)** return promise
- .catch(onRejected(s)) = .then(undef,s)**
- .then(onFulfilled(v), onRejected(s))**
- .race(obj)** return greedy promise (res/rej)
- .resolve(obj)** return resolved promise
- .reject(reason)** return rejected promise

## Proxy() Reflect same methods (not func)

## METHODS

- .apply(obj, arg, arglist)** trap function call
- .construct(obj, arglist)** trap new oper
- .defineProperty(obj, prop, desc)**
- .deleteProperty(obj, prop)** trap delete
- .enumerate(obj)** trap for...in
- .get(obj, prop, rec)** trap get property
- .getOwnPropertyDescriptor(obj, prop)**
- .getPrototypeOf(obj)**
- .has(obj, prop)** trap in operator
- .ownKeys(obj)**
- .preventExtensions(obj)**
- .set(obj, prop, value)** trap set property
- .setPrototypeOf(obj, proto)**

## globals

## METHODS

- eval(str)** evaluate javascript code
- isFinite(obj)** check if is a finite number
- isNaN(obj)** check if is not a number
- parseInt(s, radix)** string to integer
- parseFloat(s, radix)** string to float
- encodeURIComponent(URI)** = to %3D
- decodeURIComponent(URI)** %3D to =

## Set()

WeakSet only obj as items

## PROPERTIES

- .size** return number of items

## METHODS

- .add(item)** add item to set **WS**
- .has(item)** check if item exists **WS**
- .delete(item)** del item & return if del **WS**
- .clear()** remove all items from set

## ITERATION METHODS

- .entries()** iterate items
- .values()** iterate only value of items

## CALLBACK FOR EACH METHODS

- .forEach(cb(e,i,a), arg)** exec for each

## Map()

WeakMap only obj as keys

## PROPERTIES

- .size** return number of elements

## METHODS

- .set(key, value)** add pair key=value **wm**
- .get(key)** return value of key **wm**
- .has(key)** check if key exist **wm**
- .delete(key)** del elem. & return if ok **wm**
- .clear()** remove all elements from map

## ITERATION METHODS

- .entries()** iterate elements
- .keys()** iterate only keys
- .values()** iterate only values

## CALLBACK FOR EACH METHODS

- .forEach(cb(e,i,a), arg)** exec for each

## Symbol()

## PROPERTIES

- .iterator** specifies default iterator
- .match** specifies match of regexp
- .species** specifies constructor function

## METHODS

- .for(key)** search existing symbols
- .keyFor(sym)** return key from global reg

## Generator() = function\* () { ... }

## METHODS

- .next(value)** return obj w/{value,done}
- .return(value)** return value & true done
- .throw(except)** throw an error

## Others

## FAST TIPS

**var** declare variable  
**let** declare block scope local variable  
**const** declare constant (read-only)  
**func(a=1)** default parameter value  
**func(...a)** rest argument (spread operator)  
**(a) => { ... }** function equivalent (fat arrow)  
**`string \${a}`** template with variables  
**0bn** binary (2) number **n** to decimal  
**0on** octal (8) number **n** to decimal  
**0xn** hexadecimal (16) number **n** to decimal  
**for (i in array) { ... }** iterate array, i = index  
**for (e of array) { ... }** iterate array, e = value  
**class B extends A () {}** class sugar syntax