

⑦ Math.ceil(); $\rightarrow$ It is used to return the highest integer for the given arguments.

R.T $\rightarrow$ Double

Eg:- Math.ceil(8); $\rightarrow$ 8.0

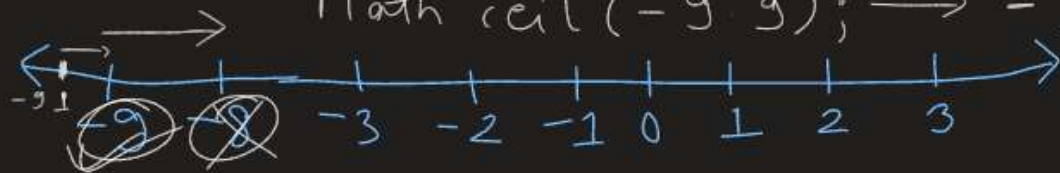
Math.ceil(9.1); $\rightarrow$ 10.0

Math.ceil(9.9); $\rightarrow$ 10.0

Math.ceil(-9); $\rightarrow$ -9.0

Math.ceil(-9.1); $\rightarrow$ -9.0

Math.ceil(-9.9); $\rightarrow$ -9.0



⑧ Math.floor() $\rightarrow$ It gives lower integer for the given argument.

RT $\rightarrow$ Double.

Eg:- $\text{Math.floor}(100) \rightarrow 100.0$
 $\text{Math.floor}(100.001) \rightarrow 100.0$
 $\text{Math.floor}(100.9) \rightarrow 100.0$
 $\text{Math.floor}(-99.1) \rightarrow -100.0$
 $\text{Math.floor}(-99.9) \rightarrow -100.0$

⑨ Math.round(): It returns the value in rounded off form.

→ If the fractional part of the argument is less than 0.5, then the integer part of the argument will be returned.

R.T. → int or long

Argument double → long
Argument float → int

~~Integer~~

```
int x = Math.round(21.3);  
System.out.println(x);
```

→ Double

For Positive : If the fractional part lies between 0 (inclusive) & 0.5 (exclusive) then the function `Math.round()` will return the integer part of the argument.

Eg:- Math. round (4.4) $\rightarrow$ 4
Math. round (4.3) $\rightarrow$ 4
Math. round (4.5) $\rightarrow$ 5
Math. round (4.9) $\rightarrow$ 5

For -ve numbers

If fractional part lies between 0 (inclusive) & 0.5 (inclusive) then the function `Math.round()` will return the integer part of the no.

We see only magnitude.

-3, -5, -5, -5

Eg:- `Math.round(-4.2)` :- -4

`Math.round(-4.5)` :- -4

`Math.round(-4.500001)` :- -5

`Math.round(-9.99)` :- -10

10 Math.random(); $\rightarrow$ It gives any random value between 0 (inclusive) & 1 (exclusive).

0 $\rightarrow$ 0.99999...

R.T $\rightarrow$ double

Q Using Math.random print the following.

(1) Any random value between 0 & 1.

Soln $\Rightarrow$ `SoPln (Math.random());`

Q Using Math.random print the following.

(1) Any random value between 0 & 1.

Soln $\Rightarrow$ `Math.random()`;

(2) Any random ^{integer} value between 0 & 10.

(3) Any 3 digit random no.

(4) Any integer between 10 & 20.

(5) Any real no. between 50 & 100.