

Math APIs

Math API Methods

```
// min() and max()
```

```
int a = Math.max(3, 11);
```

```
=> 11
```

```
int b = Math.min(2, -4);
```

```
=> -4
```

```
// you can compare all types of numbers, but be aware of autocasting
```

```
long a = 5;
```

```
int b = 3;
```

```
int c = Math.max(a, b);
```

```
// DOES NOT COMPILE
```

```
int d = (int) Math.max(a, b);
```

```
=> 5
```

// round() -> takes decimal number and returns integral number

// if parameter is float, return type will be int

// if parameter is double, return type will be long

double d = 2.56;

long a = Math.round(d);

=> 3

int b = Math.round(d);

// DOES NOT COMPILE

int c = (int) Math.round(d);

=> 3

```
// ceil() and floor()
```

```
// take any number and always returns double
```

```
double r = Math.ceil(2.45);
```

```
=> 3.0
```

```
double p = Math.floor(2.45);
```

```
=> 2.0
```

```
double q = Math.floor(2.99);
```

```
=> 2.0
```

```
// exponents: pow()
```

```
// takes any number, returns double
```

```
double p = Math.pow(2, 5);
```

```
=> 32.0
```

```
double q = Math.pow(25, 0.5);
```

```
=> 5.0
```

```
// random numbers
```

```
double ran = Math.random();
```

```
=> random number between 0 and 1.0 (not included)
```