Digits in numbers

In real math world you can freely work with numbers: add, subtract, multiply, divide, or to use more complicated operations. But what if you need to do something with digits of a given number? For example, find the sum of digits, or find the minimum digit in a number? For these questions we consider two cases:
- the given number has specific number of digits;
- the given number can have any amount of digits;

Let we have two-digit integer $n = \overline{ab}$. This notation means that n has a tens and b ones. For example, if $n = 45$, then $a = 4$, $b = 5$. How can we get the values of a and b out of n? Here is the formulas:

```
a = n / 10;
b = n % 10;
```

Let's check:
- $45 / 10 = 4$ (operation / for integers is an integer division);
- $45 \% 10 = 5$ (remainder after dividing 45 by 10 is 5);

Integer division by 10 usually means removing the last digit. For example:

n	123	78	100	92	1234
n / 10	12	7	10	9	123

E-OLYMP 1. Simple problem Two-digit number n is given. Print its first and second digit space separated.
► Let $n = \overline{ab}$. Find the values of a and b and print them space separated.

E-OLYMP 5175. The last digit Print the last digit of number n.
► The last digit of n is $n \% 10$.

E-OLYMP 8602. Third from right Print the third digit from the right of n.
► The third digit from the right of n is $n / 100 \% 10$.

E-OLYMP 8601. Swap the digits in two-digit integer Given two-digit positive integer n. Print the number after swapping its digits.
► If $n = \overline{ab}$, the resulting number $res = \overline{ba}$. This number can be obtained like
$$res = b * 10 + a$$

E-OLYMP 939. The square of sum Find the square of sum of digits of two digit integer n.
► If $n = \overline{ab}$, the result is $(a + b)^2$.

Let we have three-digit integer $n = \overline{abc}$. The formulas for digits are:

```
a = n / 100;
```

```
b = n / 10 % 10;
c = n % 10;
```

If you want to get numbers obtained by digits permutation of n, the results can be:

$x = \overline{cba}$: $x = c * 100 + b * 10 + a$;

$x = \overline{bca}$: $x = b * 100 + c * 10 + a$;

E-OLYMP 8599. Digits of 3-digit number Print the digits of 3-digit integer n space separated.

► Let $n = \overline{abc}$. Find a, b, c and print them space separated.

E-OLYMP 906. Product of digits Find the product of digits of 3-digit number n.

► Let $n = \overline{abc}$. Find a, b, c and print their product.

Let we have four-digit integer $n = \overline{abcd}$. Do you remember that division by 10 means removing the last digit?

n	n / 10	n / 100	n / 1000
$\overline{abcd}$	$\overline{abc}$	$\overline{ab}$	$\overline{a}$

The formulas for digits are:

```
a = n / 1000;
b = n / 100 % 10;
c = n / 10 % 10;
d = n % 10;
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E-OLYMP 959. Sum of digits Find the sum of the first and the last digit in a four digit positive integer n.

► Let $n = \overline{abcd}$. Find the sum $a + d$.

E-OLYMP 9422. Left and right Swap the first and the last digit in a four digit positive integer n.

► If $n = \overline{abcd}$, the resulting number $res = \overline{dbca}$. This number can be obtained like

$$res = d * 1000 + b * 100 + c * 10 + a$$