# Recursion

TOP DEFINITION

## recursion

See recursion.

by Anonymous December 05, 2002

Recursive functions are functions defined in terms of themselves.
e.g. the factorial function is recursive:

$$n! = f(n) = \begin{cases} 1 & \text{if } n=0 \\ nf(n-1) & \text{otherwise} \end{cases}$$

$(0! = 1,\ 1! = 1 \times 0! = 1,\ 2! = 2 \times 1! = 2,\ 3! = 3 \times 2! = 6, \ldots)$

What is the most important part of any recursive function?
The base case. This is the part of the function that does not recursively call itself.
Can think of it as the end of the recursion.

What happens if we forget it?
Without a base case, the function just keeps recursively calling itself, so your function won't stop.

This is often called infinite recursion.