Tehnici de baza in activitatea stiintifica
Techniques for Scientific Work (WS 2015-2016)
Homework 3 (due November 25, 2015)

1. For each symbol occurring in the following formula, specify whether it is a: logical quantifier, logical connective, predicate symbol, function symbol, variable, or constant. (Note that functions and predicates can also be constant or variable.)

$$\underset{f}{\forall} L[f,a] \quad \Longleftrightarrow \quad \underset{\varepsilon>0}{\forall}\ \underset{N}{\exists}\ \underset{n\geq N}{\forall} |f(n)-a|<\varepsilon$$

2. In the previous definition, L denotes the limit of a function, f denotes a real function of real argument, and a, ε, n, N denote real numbers. Formulate and prove the statement that if the limit of f is a and of g is b then the limit of $f+g$ is $a+b$.