α-EQUIVALENCE

Suppose $\lambda x.P$ is a term and $y \notin \mathrm{FV}(P)$. Then the act of replacing $\lambda x.P$ by $\lambda y.P[y/x]$ is called a ***change of bound variable name***. If two terms M and N can be made identical just by changing bound variable names to fresh variable names (not already used inside them), we say they are ***α-equivalent***.

λ-TERMS

The set of λ-***terms*** is the set Λ with all α-equivalent terms identified.

From now on, whenever we say "term", we mean "λ-term".

The Variable Convention. If $M_1, \ldots, M_k$ occur within the same scope, then in these terms you may assume that all bound variables are chosen to be different from any others.