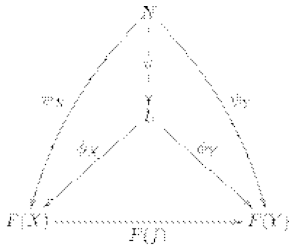


Limits and Colimits

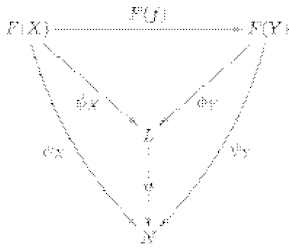
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A **limit** of the diagram $F : J \rightarrow C$ is a cone (L, ϕ) to F such that for any other cone (N, ψ) to F there exists a *unique* morphism $u : N \rightarrow L$ such that $\phi_X \circ u = \psi_X$ for all X in J .

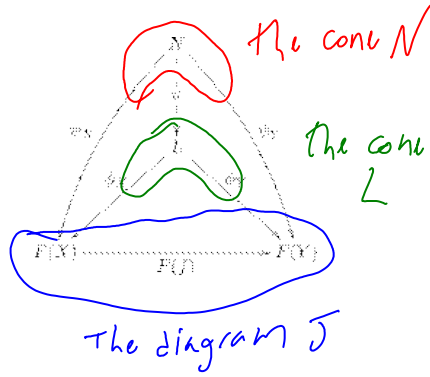


Pasted from
<[http://en.wikipedia.org/wiki/Limit_\(category_theory\)](http://en.wikipedia.org/wiki/Limit_(category_theory))>

A **colimit** of a diagram $F : J \rightarrow C$ is a co-cone (L, ϕ) of F such that for any other co-cone (N, ψ) of F there exists a unique morphism $u : L \rightarrow N$ such that $u \circ \phi_X = \psi_X$ for all X in J .



Pasted from
<[http://en.wikipedia.org/wiki/Limit_\(category_theory\)](http://en.wikipedia.org/wiki/Limit_(category_theory))>



Examples. Products, Inverse limits,...

