Notes on GF's blog etc etc.

Index of the slides:

Notes on "Grothendieck Topologies - Part I (Pretopologies)"
http://catsinthejungle.wordpress.com/2008/11/10/
grothendieck-topologies-part-i-pretopologies/

(i) The family $\{U\}$ covers U.
(ii) If the family $\mathcal{U} = (U_\alpha)_{\alpha \in A}$ covers U and $V \subseteq U$,
then the family $(V \cap U_\alpha)_{\alpha \in A}$ covers V.
(iii) If the family $\mathcal{U} = (U_\alpha)_{\alpha \in A}$ covers U
and for each $U_\alpha \in \mathcal{U}$
the family $\mathcal{V}_\alpha = (V_{\alpha\beta})_{\beta \in B_\alpha}$ covers U_α
then the family $(V_{\alpha\beta})_{\alpha \in A, \beta \in B_\alpha}$ covers U.

(i) The family $\{I_U : U \to U\}$ P-covers U.
(ii) If the family $\mathcal{U} = (U_\alpha \to U)_{\alpha \in A}$ P-covers U and $f : V \to U$,
then the family $(V \times_U U_\alpha \to V)_{\alpha \in A}$ P-covers V.
(iii) If the family $\mathcal{U} = (U_\alpha \to U)_{\alpha \in A}$ P-covers U
and for each $(U_\alpha \to U) \in \mathcal{U}$
the family $\mathcal{V}_\alpha = (V_{\alpha\beta} \to U_\alpha)_{\beta \in B_\alpha}$ P-covers U_α
then the family $(V_{\alpha\beta} \to U_\alpha \to U)_{\alpha \in A, \beta \in B_\alpha}$ P-covers U.