bases and perfect symmetric structures is one-one. Note that $A < B$ means that B contains the neighborhood of A of order $U_<$.

The passage from uniformity to proximity to topology goes this way. If $\mathcal{S}$ is perfect and symmetric, then $\{<\} = \{\cup \mathcal{S}\}$ is (simple and) symmetric; and if $A <' B$ means that $\{x\} < B$ for all $x \in A$, then $\{<'\}$ is (simple and) perfect.

The familiar discrete structures are obtained from the family $\{\subset\}$. The usual uniformity on R is obtained from $\{<^\epsilon : \epsilon > 0\}$ [reviewer's notation], where $A <^\epsilon B$ means dist $(A, R-B) \geqq \epsilon$. (The associated relations U^ϵ of (f) then satisfy: $x U^\epsilon y$ if and only if $|x-y| < \epsilon$.)

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RESEARCH PROBLEM

28. Frank Harary. *Matrix theory.*

Prove or disprove the following conjecture suggested by J. Selfridge (oral communication). For any graph G with 9 points, G or its complementary graph $\bar{G}$ is nonplanar. Experimental evidence appears to support this conjecture, which in turn would imply the validity of the conclusion for any graph with at least 9 points. A simple argument using Euler's polyhedron formula serves to prove that if G is a graph with p points and q lines for which $q > 3p-6$, then G is nonplanar. This proves the conclusion of the conjecture for all graphs with at least 11 points. For graphs G with 9 or 10 points, it is still open. (Received August 15, 1961.)