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Jonathan David Farley* (lattice@math.harvard.edu), Center for International Security (CISAC), Stanford University, 616 Serra Street, Stanford, CA 94305. *The Independence of the Conditions in Rado's Generalization of Hall's Marriage Theorem: A Problem (Attributed to Rado) from Mirsky's 1971 Monograph "Transversal Theory"*.

A "restricted Boolean polynomial" $\rho(x_1, \dots, x_n)$ is a finite expression involving x_1, \dots, x_n (variables that range over sets) formed by means of unions and intersections. Let R be a class of pairwise inequivalent restricted Boolean polynomials. It is shown that the conditions

$$|\rho(A_1, \dots, A_n)| \geq |\rho(B_1, \dots, B_n)| \quad (\rho \in R)$$

are independent. That is, given $\rho \in R$, there exist sets $A_1, \dots, A_n, B_1, \dots, B_n$ such that the condition

$$|\sigma(A_1, \dots, A_n)| \geq |\sigma(B_1, \dots, B_n)|$$

holds for all $\sigma \in R$ where σ is not equivalent to ρ , but

$$|\rho(A_1, \dots, A_n)| < |\rho(B_1, \dots, B_n)|.$$

This solves a problem (attributed to Rado) from Mirsky's 1971 text "Transversal Theory". (Received September 28, 2005)