

## On Chvátal's Conjecture for the Hamiltonicity of 1-Tough Graphs and Their Complements

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**Abstract :** In this paper, we show that the conjecture of Chvátal, which states that any 1-tough graph is either a Hamiltonian graph or its complement contains a specific graph denoted by  $F$ , does not hold in general. More precisely, it is true only for graphs with six or seven vertices, and is false for graphs with eight or more vertices. A theorem is derived as a correction for the conjecture.

**Keywords :** complement, degree sum, hamiltonian, tough

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