KE-index

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In this work, we introduce the KE-index. The KE-index of a graph is defined as the difference between the vertex covering number and the matching number of the graph. This number measures, in some sense, how far a graph is from being a Kőnig-Egerváry graph. We present several properties of the KE-index and demonstrate that various statements involving Kőnig-Egerváry graphs are, in fact, general statements about graphs when considered in terms of the KE-index. We also provide lower and upper bounds for the Kőnig Deletion Problem.

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