On $(a, d)-$Irregular Total Labelings

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A total edge irregular $k-$labeling of a graph $G = (V, E)$, $\partial : V \cup E \to \{1, 2, 3, \cdots, k\}$ is a labeling of vertices and edges of G in such a way that the weights of all edges are distinct. A total edge irregularity strength of graph G, denoted by tes(G) is defined as the minimum k for which a graph G has a totally irregular total $k-$labeling. In this paper, we define $(a, d)-$total edge irregularity labeling and provide the irregularity strength for some well known planar graphs.