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### **Abstract**

*Let  $G$  be a Simple Graph with Vertex set  $V(G)$  and Edge set  $E(G)$  respectively. Vertex set  $V(G)$  are labeled arbitrary by positive integers and let  $E(e)$  denote the edge label such that it is the sum of labels of vertices incident with edge  $e$ . The labeling is said to be lucky edge labeling if the edge set  $E(G)$  is a proper coloring of  $G$ , that is, if we have  $E(e_1) \neq E(e_2)$  whenever  $e_1$  and  $e_2$  are adjacent edges. The least integer  $k$  for which a graph  $G$  has a lucky edge labeling from the set  $\{1, 2, \dots, k\}$  is the lucky number of  $G$  denoted by  $\eta(G)$ .*

*A graph which admits lucky edge labeling is called Lucky Edge Graph. In this paper, it is proved that Planar Grid Graph  $P_m \times P_n$  are lucky edge labeled graphs.*

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