



## GRAPHS WITH NON-SINGULARITY

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### Abstract

A graph is said to be non-singular if the adjacency matrix is non-singular. In this paper, we give the non-singular graph with loop complement, which is also non-singular. In particular, the non-singularity of some special classes of graphs is revealed.

### 1. Introduction and Preliminaries

In this paper, we consider graph theory with linear algebra. As the aim of research, we find graphs and its loop complement which are non-singular adjacency matrices. The results on non-singularity (singularity) of graphs are continuing education as following. In [4], Gervacio and Rara investigated non-singularity of trees. In [2, 3], Gervacio investigated singularity of bipartite graphs and non-singularity of complement of trees with diameter less than 5. Finally, in [7], Sookyang et al. investigated non-singularity of cycles and trees.

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