Notes of "Applications of Determinants"

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1   Overview

- The Criterion for Non-Degenerate Matrices

- Cramer's Rule

- 加边子式法

  - Definition: A k-th order minor of a matrix

  - Theorem: 加边子式法

  - Corollary: A practical way of computing the rank of a matrix

2   The Criterion for a Non-Degenerate Matrix

3   Cramer's Rule

4   加边子式法

Definition 1 (A k-th order minor of a matrix)**.**

Theorem 1 (加边子式法)**.**

Remark 1. *加边子式法 is practically useful especially when we want to find not only the rank, but also a maximal linearly independent subset of rows or columns of a matrix. Compared with it, transformation to row echelon form by elementary operations will lose the information of maximal linearly independent subsets because elementary operations will modify the elements of the matrix.*

Corollary 1 (A practical way of computing the rank of a matrix)**.** *The rank of a matrix equals to the maximum order of its non-zero minors.*