0.1 Example

Definition 0.1. Let $\mathscr{I}$ be the collection of subsets of E that do not contain all of the edges of any simple closed path or *cycle* of G.

Definition 0.2. We get a matroid on the edge set of every graph G by defining $\mathscr{I}$ as above. This matroid is called the *cycle matroid* of the graph G and is denoted $M(G)$.

Definition 0.3. If M is a matroid , then is there exists a bijection from the ground set of M_i to the ground set of M_j, such that a set is independent in the first matroid if and only if it is independent in the second matroid, then M_i and M_j are said to be isomorphic.

Note. A matroid that is isomorphic to the cycle matroid of some graph is called graphic. And every graphic matroid is binary

The numbers of non-isomorphic matroids,simple matroids and binary matroids on an n-element set for $0 \leq n \leq 8$

n	0	1	2	3	4	5	6	7	8
matroids	1	2	4	8	17	38	98	306	1724
binary matroids	1	2	4	8	16	32	68	148	342