

# Graph Theory

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# 1 Independence, matching, covers

## 1.1 Definitions

**Definition 1.1.1.** A set  $S \subseteq V$  is an ***independent set*** if  $G[S]$  contains no edges. The ***independence number***  $\alpha(G)$  is the maximum possible cardinality of an independent set.

**Definition 1.1.2.**

**Definition 1.1.3.**

**Definition 1.1.4.**

**Theorem 1.1.5** (Gallai). If  $\delta(G) \geq 1$ , then  $\alpha'(G) + \beta'(G) = n(G)$ .

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