Statement of the LGV Lemma

$$S : \text{A Set of vertices}$$

$$v : S \longrightarrow S \longrightarrow \mathbb{R}\text{Weight functions}$$

$$\{A_i\}_{i \leq n \leq \infty} \subseteq S$$

$$\{B_i\}_{i \leq n \leq \infty} \subseteq S$$

A path ω from x to y is defined as a set of nodes in order such that every pair of 2 nodes is connected by an edge and the first node is x and the last node is y.

More formally

$$\omega_{x \to y} := \langle x, ..., y \rangle$$

Weight of path $omega_{x \to y}$ is defined as $v(\omega) := \prod_{i \in [|\omega|]} v(s_{i-1}, s_i)$