COMBINATORICS 2

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Definition 1 (Hypergraph)**.** A *hypergraph* $\mathcal{H}$ is given by $\mathcal{H} = (V, \mathcal{E})$ for a set *vertex set* V and *edge set* $\mathcal{E}$: a collection of subsets of V. Additionally: $V, \mathcal{E} \neq \emptyset$. Note we allow repeated edges and $\mathcal{E} \ni e = \emptyset$.

Definition 2 (Simple Hypergraph)**.** A hypergraph $\mathcal{H}$ with no *multiedges* (there are no repeated edges in $\mathcal{E}$).

Definition 3 (Singleton, Isolated)**.** An edge $e \in \mathcal{E}$ is a *singleton* if $|e| = 1$. A vertex $v \in V$ is *isolated* if no edge contains it.

Definition 4 (Degree)**.**

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