CLIQUE

Definition: A **clique** in $G = (V, E)$ is a subset V_0 of the vertices of G such that every pair of vertices in V_0 are adjacent. In other words, $V_0 \subseteq V$ such that $\forall \{v, w\} \subseteq V_0, (v, w) \in E$.

Decision problem:

- Input: Graph $G = (V, E)$ and integer k
- Question: Does G have a clique of size k?

Optimization problem: Find the size of the largest clique in the input graph G.

Construction problem: Find the largest clique in the input graph G.

NOTE: CLIQUE is NP-complete (one of Karp's original 21 problems)