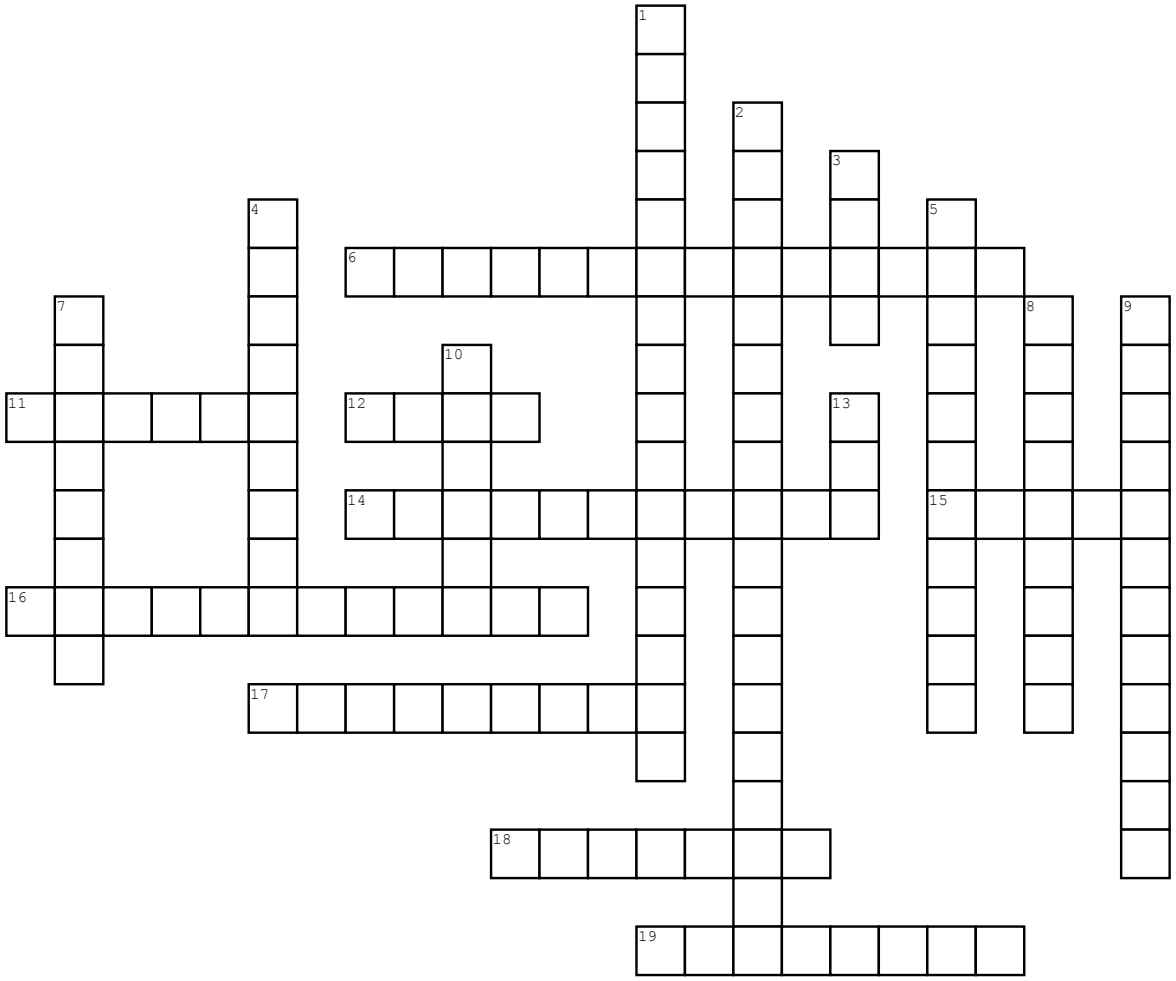
# Graph Theory



**Across**

**6.** A set of pairwise nonadjacent vertices of a graph.
**11.** A set of pairwise adjacent vertices in a graph.
**12.** A vertex of degree 1.
**14.** A tree in which a single path is incident to every edge.
**15.** A graph with an equal number of vertices and edges whose vertices can be placed around a circle so that two vertices are adjacent if and only if they appear consecutively along the circle.
**16.** An X,Y - bigraph G has a matching that saturates X if and only if $|N(S)| \geq |S|$ for all $S \subseteq X$.
**17.** A graph G if V(G) is the union of two disjoint independent sets.
**18.** A graph with no cycles.
**19.** A set of non-loop edges with no shared endpoints in a graph.

**Down**

**1.** A set of edges $F \subseteq E(G)$ such that G - F has more than one component.
**2.** Two paths from u to v who have no common internal vertex.
**3.** A simple graph whose vertices can be ordered so that two vertices are adjacent if and only if they are consecutive in the list.
**4.** On a graph G, a set $S \subseteq V(G)$ such that G - S has more than one component.
**5.** Of a graph G, is a set $Q \subseteq V(G)$ that contains at least one endpoint of every edge.
**7.** A graph if it has a closed trail containing all edges.
**8.** A set L of edges such that every vertex of a graph G is incident to some edge of L.
**9.** The minimum size of a vertex cut.
**10.** A spanning subgraph of a graph G.
**13.** A maximal path whose internal vertices have degree 2 in a graph G.