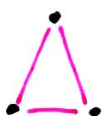## ## Common Graphs ## #

Complete graph, denoted K_n, is a graph of n vertices that has an edge between every pair of vertices. (i.e. all vertices are connected to each other)

K_n is also called a clique of size n or a n-clique examples:
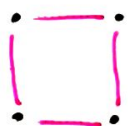

K_4 K_3 K_2 K_1

a cycle graph, denoted C_n, is a graph of n vertices where the edges connect the vertices in a ring. The degree for each vertex =2. C_n is also called a cycle on n.
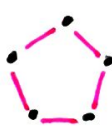
Note: C_n is well defined only for $n \geq 3$

C_3 C_4 C_5 C_6
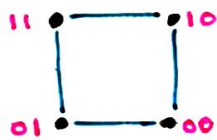
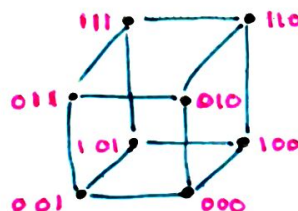the n-dimensional hypercube, denote Q_n, has 2^n vertices. Each vertex has an n-bit string label. There's an edge between two vertices if their corresponding labels differ by one bit.
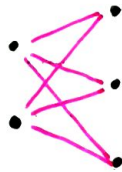

Q_1 Q_2

a **bipartite graph**, denoted $K_{m,n}$, has **two vertex subsets.** One subset has **M vertices** and the other has **n vertices.** There are **no edges between vertices of the same subset,** but there is **an edge between every vertex** in one set to the other set.
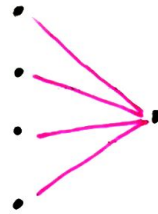
examples:

$K_{3,3}$ $K_{2,3}$ $K_{4,1}$