1. (2 points) Define the complete bipartite graph $K_{p,q}$.

2. (2 points) Define the cube graph $Q_k = (V(Q_k), E(Q_k))$.

3. (3 points) Assume that $k \geq 2$ and $u \in V(Q_k)$. Suppose that $v$ and $w$ are two different neighbors of $u$. Show that $v$ and $w$ have exactly two common neighbors. ($|N(v) \cap N(w)| = 2$. For partial credit you can assume that $k = 3$.)

4. (3 points) Does $Q_k$ have a subgraph isomorphic to $K_{2,3}$? (Justify!)