1. A $k$-regular graph is a graph $G$ such that $\text{deg}(v) = k$ for each vertex $v \in V(G)$. How many edges are in a $k$-regular graph with $n$ vertices?

2. Which of the following graphs are bipartite? Which are not? Prove your answers.

3. Suppose a graph $G$ contains a vertex $u$ with odd degree. Prove that there exists another vertex $v$ distinct from $u$ which also has odd degree.