Independence Number of a Graph.

An independent set in a graph is a set of vertices which are pair-wise non-adjacent (that is, a set of vertices with no edge between any pair).

The independence number $\alpha$ of a graph is the cardinality of a maximum independent set.

1. Find a maximum independent set and $\alpha$.

2. Find a formula for $\alpha$ for a complete graph $K_n$.

3. Find a maximum independent set and $\alpha$.

4. Find a formula for $\alpha$ for a path graph $P_n$.

5. Find a maximum independent set and $\alpha$. 
6. Find a formula for $\alpha$ for a cycle graph $C_n$.

7. Find a maximum independent set and $\alpha$.

8. Find a maximum independent set and $\alpha$.

9. Find $\alpha$. 