Exercise 1  
(4 points)

Prove or disprove that the following definitions of a chordal graph are equivalent to that from the lecture:

1. A graph $G$ is chordal iff each of its node-induced subgraphs contains a simplicial node.
2. A graph $G$ is chordal iff its node set can be partitioned into a clique $A$ and an independent set $B = V(G) \setminus A$.

Exercise 2  
(4 points)

Prove that interval graphs are chordal. Then give a simple algorithm computing a PES for the intersection graph of a given set $I$ of intervals in time $O(|I| \cdot \log |I|)$. Prove the correctness.

Exercise 3  
(4 points)

Prove or disprove that the diameter of Cube-Connected Cycles is indeed the one given in the lecture.