

Student Number

Name

1. Show that the following INDEPENDENTSET (IS) decision problem belongs to NP .

Input: An undirected graph $G = (V, E)$ and a positive integer k .

Question: Does G contain an *independent set* of size at least k , i.e., a subset of vertices $I \subseteq V$ such that $|I| \geq k$ and G contains **no** edge between any two vertices in I ?

Do you think it is likely that $IS \in P$? Why or why not?

Given/First Name(s)

Family/Last Name(s)