

- (a) Suppose that $P = NP$. Prove that $NP \setminus (P \cup NP-C) = \emptyset$.
- (b) Suppose now that $NP \setminus (P \cup NP-C) = \emptyset$. Prove that $P = NP$.

Note. *This is the corollary of Ladner's theorem.*

Rubric.

- This task will form part of the portfolio.
- Ensure that your argument is clear and keep reworking your solutions until your lab demonstrator is happy with your work.