To show that **P** is closed under complements, we argued that switching the accept and reject states in a deterministic Turing machine produces a machine that decides the complement.

For this question, you are to show that this argument does not work for **NP**. Give an example of a language $L \in \mathbf{NP}$ and a polynomial-time, non-deterministic Turing machine M_L that decides L; and argue that the machine M' obtained by switching the accept and reject states of M_L does not decide $\overline{L}$. What language does M' decide?

It suffices to describe your Turing machine at a high level, for example using the "guess and check" paradigm.