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First, we will convert ϕ into CNF, which is unique. This is a polynomial time conversion. Let's call the CNF formula ψ. If ψ has any clauses that consist entirely of y's only, then this ALT problem for ϕ is unsatisfiable and our final answer is no, because no matter what you assign the x's, just make one of said clauses with just y's false and ψ will be unsatisfiable. This process if polynomial time. If there are no such clauses, then we will remove all the y's from the formula then ask the oracle if the remaining formula consisting of just the x's is satisfiable. The oracle will give our final answer. This gives the correct answer because if the formula gets an assignment that makes it true, then it'll obviously still be true if we add all the y's back in because $true \vee y_i = true$ no matter what y_i is. This makes $\mathrm{ALT} \in NP^{SAT}$ because the conversion to CNF is polynomial time, and getting rid of all the y's is polynomial time, and then you can verify whether a potential answer is correct in polynomial time by using the oracle (or by seeing if there's any clauses consisting entirely of y's). QED.