STUDENT: **The complexity of problems often depends on what?**
TEACHER: ↪ “” (the type of reduction being used)

STUDENT: **What would create a conflict between a problem X and problem C within the context of reduction?**
TEACHER: ↪ “” (if every problem in C can be reduced to X)

STUDENT: **An algorithm for X which reduces to C would us to do what?**
TEACHER: ↪ “” (solve any problem in C)

STUDENT: **A problem set that that is hard for the expression NP can also be stated how?**
TEACHER: ↪ “” (NP-hard)

STUDENT: **What does the complexity of problems not often depend on?**
TEACHER: ↪ “” (CANNOTANSWER)

STUDENT: **What would not create a conflict between a problem X and problem C within the context of reduction?**
TEACHER: ↪ “” (CANNOTANSWER)

STUDENT: **What problem in C is harder than X?**
TEACHER: ↪ “” (CANNOTANSWER)

STUDENT: **How is a problem set that is hard for expression QP be stated?**
TEACHER: ↪ “” (CANNOTANSWER)

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Context: This motivates the concept of a problem being hard for a complexity class. A problem X is hard for a class of problems C if every problem in C can be reduced to X. Thus no problem in C is harder than X, since an algorithm for X allows us to solve any problem in C. Of course, the notion of hard problems depends on the type of reduction being used. For complexity classes larger than P, polynomial-time reductions are commonly used. In particular, the set of problems that are hard for NP is the set of NP-hard problems. CANNOTANSWER