Worth: 2%   **Due:** By 8:59pm on Tuesday 24 March

Remember to write your *full name* and *student number* prominently on your submission.

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*Please read and understand the policy on Collaboration given on the Course Information Sheet. Then, to protect yourself, list on the front of your submission **every** source of information you used to complete this homework (other than your own lecture and tutorial notes). For example, indicate clearly the **name** of every student with whom you had discussions, the **title and sections** of every textbook you consulted (including the course textbook), the **source** of every web document you used (including documents from the course webpage), etc.*

*For each question, please write up detailed answers carefully. Make sure that you use notation and terminology correctly, and that you explain and justify what you are doing. Marks **will** be deducted for incorrect or ambiguous use of notation and terminology, and for making incorrect, unjustified, ambiguous, or vague claims in your solutions.*

Show that SubsetSum is polytime self-reducible. Write up your answer *carefully*, taking the time to explain what you are doing at each step so we can tell that you understand what is involved in answering this type of question. And remember that a complete solution to this type of problem includes an argument of correctness!

Note: This is another one of those problem sets where it's very easy to find solutions online. Given that it looks more and more likely that this problem set will not even be graded, doing this would be extremely foolish: not only would you get no grade anyway but you would sabotage your own learning experience. Remember that the goal of the problem sets is **NOT** to show that you can *find* a solution: it is, first and foremost, to give you a chance to *practice* applying the course material, so that you can understand it better and be better prepared to solve similar problems on the Assignment, Midterm Test and Final Exam. You know you won't really understand how to solve this type of problem until you've had a chance to figure one out for yourself. So take this opportunity and practice on this simple problem! I even picked one that is particularly straightforward: there is no "trick" involved in answering the question here, just a direct application of the method of self-reducibility.