All The World's NP-Complete, And All The Men and Women Merely P...

Every problem in this assignment (except the extra credit problem) involves transforming some problem A into another problem A' such that

- Any solution to problem A satisfying some property P corresponds to a solution to problem A' satisfying some (hopefully related!) property P', and

- Any solution to problem A' satisfying property P' corresponds to a solution to problem A satisfying property P

- The instance of problem A' constructed from an instance of problem A is not too big.

Be sure to establish each of these facts in your solutions!

Question 1. *Chapter 8, Problem 5: Hitting Set.*

Question 2. *Chapter 8, Problem 6: Monotone Satisfiability with Few True Variables.*

Question 3. *Chapter 8, Problem 14: Interval Scheduling.*

Question 4. *Chapter 8, Problem 17: Zero-Weight Cycles.*

Question 5. *Chapter 8, Problem 32: Perfect Assembly.*

Extra Credit

Question 6. *Chapter 8, Problem 23: Bad Proofs and Pidgeons.*