

Problem 1

Answer: Each gas station has an incentive to undercut the high price to steal customers from their opponent.

Problem 2

Answer: The contract specifies a sufficiently large penalty when a gas station deviates from the high price specified in the contract.

Problem 3

Answer: By deviating from the high price, a gas station can gain some profit today, but its future profits may decrease.

Problem 4

Answer:

- ▷ Version 1: Once the restaurant cheats a customer, it will be known through rumors or through messages posted on the Internet sites. Then, other customers stop coming to the restaurant.
- ▷ Version 2: Charge price = \$2 for as long as no one has deviated. If anyone deviates, then charge \$1 forever.

Problem 5

Answer: We say that we can “make society better” if we can increase at least one player’s payoff without decreasing any other players’ payoffs. An outcome is efficient if it is no longer possible to make society better in that sense.

Problem 6

Answer: Clean up the living room, if nobody has ever failed to do so. If anyone ever fails to clean up the room, then you will never do so.

Problem 7

Answer: $3 + d + d^2 + d^3 + \dots$