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a)Written Problems
2:3-5
Bach or Stravinsky ,Matching Pennies and the Stag Hunt are all based on the model of Prisoners Dilemma. they are the representative of Strategic games. When we meet this kind of problem, we should think about each player to be affected by the actions of all players, not only her own action.Time is absent from the model. The idea is that each player chooses her action once and for all, and the players choose their actions simultaneously in the sense that no player is informed, when she chooses her action, of the action chosen by any other player. We also need to consider the benefits each player can benefit from his own actions.

5:1-2
Extensive game with perfect information is different with The model of a strategic game suppresses the sequential structure of decision-making. When applying the model of strategic game to situations in which decision-makers move sequentially, we assume that each decision-maker chooses her plan of action once and for all; she is committed to this plan, which she cannot modify as events unfold.However, when applying extensive game with perfect information, we do so by specifying the set of all sequences of actions that can possibly occur, together with the player who moves at each point in each sequence. We refer to each possible sequence of actions as a terminal history and to the function that gives the player who moves at each point in each terminal history as the player function. It have four parts, like that:
(1)players
(2)terminal histories
(3)player function
(4)preferences for the players.

6:1
It is the introduction and cannot summarize it.

b) 1)
set g-function as g(x)

$$g(x) = \begin{cases} 0 & \text{x mod } 7 = 0 \text{ or } 2 \\ 1 & \text{x mod } 7 = 1 \text{ or } 3 \\ 2 & \text{x mod } 7 = 4 \text{ or } 6 \\ 3 & \text{x mod } 7 = 5 \end{cases}$$

2)
set g-function as g(x)

$$g(x) = \begin{cases} x/2 & \text{x is even} \\ g(x - \frac{x+1}{2}) & \text{x is odd} \end{cases}$$

3)
set g-function as g(x)

$$g(x) = \begin{cases} 0 & \text{x = 0} \\ 1 & \text{x is odd} \\ 2 & \text{x mod 8 =2 or 6} \\ 3 & \text{x mod 8 = 4} \\ x/8 + 3 & \text{x mod 8 = 0 and} x \neq 0 \end{cases}$$

c)
1)
set g-function as g(x)

$$g(x) = \begin{cases} 0 & \text{x is even} \\ 1 & \text{x is odd} \end{cases}$$

2)
set g-function as g(x)

$$g(x) = \begin{cases} 0 & \text{x mod 9 = 0, 2 or 4} \\ 1 & \text{x mod 9 = 1, 3 or 5} \\ 2 & \text{x mod 9 =6 or 8} \\ 3 & \text{x mod 9 = 7} \end{cases}$$

set g-function as g(x)

$$g(x) = \begin{cases} 0 & \text{x mod 3 = 0} \\ 1 & \text{x mod 3 = 1} \\ 2 & \text{x mod 3 = 2} \end{cases}$$

d)
Converts the decimal number to a binary number
100 = 1100100

$200 = 11001000$
$300 = 100101100$
then $100 \oplus 200 \oplus 300 = 384 \neq 0$
I will go first