HW 9.4

Thursday, October 1, 2020 10:22 AM

Compute the Nash equilibria of the following location game. There are two people who simultaneously select numbers between zero and one. Suppose player 1 chooses s_1 and player 2 chooses s_2. If $s_i < s_j$, then player i gets a payoff of $(s_i + s_j)/2$ and player j obtains $1 - (s_i + s_j)/2$, for $i = 1, 2$. If $s_1 = s_2$, then both players get a payoff of $1/2$.

$s_i = x \quad s_j = y$

$$\frac{(x+y)}{2} = 1 - \frac{(x+y)}{2}$$

$$\frac{2(x+y)}{2} = 1$$

$$x + y = 1$$

If s_i and s_j both $= 1/2$, then they maximize and won't deviate