Problem 1. Little Kona is a small coffee company that is considering entering a market dominated by Big Brew. Each company’s profits depend on whether Little Kona Enters and whether Big Brew sets a high price or low price.

- If Small Kona Does Not Enter then they earn zero profits, and Big Brew makes $7 million if they charge a high price and $2 million dollars if they charge a low price.

- If Small Kona Does Enter and Big Brew charges a high price they will make $3 million in profit and Little Kona makes $2 million in profit, but if Big Brew charges a low price they make $1 million in profit while Little Kona loses $1 million.

(a) Define the Game. (Players, Strategies and Payoffs)

(b) Does either player in this game have a dominant strategy?

(c) Does you answer in part (b) help you figure out what the other player should do? What is the Nash equilibrium? Is there only one?

(d) Big Brew threatens Little Kona by saying, ”If you enter, we’re going to set a low price, so you better stay out.” Do you think Little Kona should believe the threat? Why or why not?

(e) If the two firms could collude and agree on how to split the profits, what outcome would they pick?
**Problem 2.** Consider the following payoff matrix and use it to answer the questions below

<table>
<thead>
<tr>
<th></th>
<th>Player 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Top</strong></td>
<td>Left: 10, 0</td>
</tr>
<tr>
<td><strong>Middle</strong></td>
<td>Player 1: 5, -8</td>
</tr>
<tr>
<td><strong>Bottom</strong></td>
<td>Player 1: 1, 6</td>
</tr>
</tbody>
</table>

(a) Does either player have a dominant strategy?

(b) Is there a dominant strategy equilibrium? Explain.

(c) Define Nash Equilibrium.

(d) Find all Nash Equilibria for this game.