For every given number $t$, solve for $x$, $y$ the system
\[ x + ty = 2, \quad tx + y = -2 \]

\[ y = \frac{2}{t-1}, \quad x = \frac{-2}{t-1} \quad (t \neq 1) \]

No solution for $t = 1$

2-5. Find an equilibrium and the corresponding payoff.

2. Restricted Nim. Last move wins. The bet is $1. Two player, A and B. Players alternate. A can take 1 or 2 stones in a move from a pile. B can take 1, 2, or 3 stones in a move from a pile. A starts with one pile, 100 stones.

Player A will lose $1

3. 2 player game in normal form.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>-1</td>
<td>-3</td>
</tr>
<tr>
<td>5</td>
<td>-1</td>
<td>5</td>
<td>0</td>
<td>-2</td>
<td>-2</td>
</tr>
<tr>
<td>0</td>
<td>4</td>
<td>-1</td>
<td>-2</td>
<td>-4</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

No equilibrium

4. Extensive form, 3 players, A, B, C.

\[ \begin{array}{c}
A \\
B \\
C
\end{array} \]

\[ \begin{array}{c}
(1,2,3) \\
(1,-1,0) \\
(0,0,2)
\end{array} \]

Initial position B

One equilibrium at (3,2,1)

Payoff: 1, -1, 0

5. Game with 3 players, A, B, C in normal form.

One equilibrium at (3,2,1)

Payoff: 1, -1, 0