EXERCISEES 2

Reduce the payoff matrices in Exercises 1–6 by dominance.

1.

$$\mathbf{A}\quad \begin{array}{c} \\ 1 \\ 2 \end{array}\!\!\begin{array}{c} \mathbf{B} \\ \begin{array}{ccc} 1 & 2 & 3 \end{array} \\ \begin{bmatrix} 1 & 1 & 10 \\ 2 & 3 & -4 \end{bmatrix} \end{array}$$

2.

$$\mathbf{A}\quad \begin{array}{c} \\ 1 \\ 2 \end{array}\!\!\begin{array}{c} \mathbf{B} \\ \begin{array}{ccc} 1 & 2 & 3 \end{array} \\ \begin{bmatrix} 2 & 0 & 10 \\ 15 & -4 & -5 \end{bmatrix} \end{array}$$

3.

$$\mathbf{A}\quad \begin{array}{c} \\ 1 \\ 2 \\ 3 \end{array}\!\!\begin{array}{c} \mathbf{B} \\ \begin{array}{ccc} a & b & c \end{array} \\ \begin{bmatrix} 0 & -1 & -5 \\ -3 & -10 & 10 \\ 2 & 3 & -4 \end{bmatrix} \end{array}$$

4.

$$\mathbf{A}\quad \begin{array}{c} \\ 1 \\ 2 \\ 3 \end{array}\!\!\begin{array}{c} \mathbf{B} \\ \begin{array}{ccc} a & b & c \end{array} \\ \begin{bmatrix} 2 & -4 & -9 \\ -1 & -2 & -3 \\ 5 & 0 & -1 \end{bmatrix} \end{array}$$

5.

$$\mathbf{A}\quad \begin{array}{c} \\ A \\ B \\ C \\ D \end{array}\!\!\begin{array}{c} \mathbf{B} \\ \begin{array}{ccc} a & b & c \end{array} \\ \begin{bmatrix} 1 & -1 & -5 \\ 4 & 0 & 2 \\ 3 & -3 & 10 \\ 3 & -5 & -4 \end{bmatrix} \end{array}$$

6.

$$\mathbf{A}\quad \begin{array}{c} \\ A \\ B \\ C \\ D \end{array}\!\!\begin{array}{c} \mathbf{B} \\ \begin{array}{ccc} a & b & c \end{array} \\ \begin{bmatrix} 2 & -4 & 9 \\ 1 & 1 & 0 \\ -1 & -2 & -3 \\ 1 & 1 & -1 \end{bmatrix} \end{array}$$

For the following payoff table, determine the value of the game and the optimal strategy for each player.

(a) $\begin{bmatrix} -2 & 1 & -3 & -1 & 5 \\ 0 & 3 & -2 & -1 & -6 \\ 1 & 1 & 1 & 0 & 1 \\ -1 & -5 & 7 & -2 & -1 \end{bmatrix}$

(b) $\begin{bmatrix} 4 & -2 \\ -2 & 0 \end{bmatrix}$