

Place **ANSWERS ONLY** in the boxes.

Given the following zero-sum game: $\begin{bmatrix} -4 & 3 \\ 3 & -2 \end{bmatrix}$

1) If player I plays row 1 30% of the time and row 2 70% of the time, and player II plays column 1 60% of the time and column 2 40% of the time, then find the Expected Payoff.

2) If player I plays row 1 40% of the time and row 2 60% of the time, and player II plays column 1 80% of the time and column 2 20% of the time, then find the Expected Payoff.

Ralph and Chuck are playing a game. They each simultaneously choose a number (1, 2, or 3). If the product of the numbers is 2, 3, or 4, then Chuck pays Ralph that number in dollars. If the product is not 2, 3, or 4, then Ralph pays Chuck that number (whatever the product is) in dollars. Let Ralph be player I (player I plays rows).

3) Construct the matrix that defines this game. (Keep the numbers in order – 1- 2 -3)

4) If each player plays each of their possible rows/columns with equal probability, then find the Expected Payoff.

5) If Ralph plays row 1 50% of the time, row 2 35% of the time, and row 3 15% of the time, and Chuck plays column 1 20% of the time, column 2 35% of the time, and column 3 45% of the time, then find the Expected Payoff

Given the following zero-sum game: $\begin{bmatrix} 4 & -3 \\ -7 & 5 \end{bmatrix}$

6) Find the optimal strategy for player I.
(VECTOR FORM)

7) Find the optimal strategy for player II.
(VECTOR FORM)

8) If each entry represents dollars, then find the expected payoff using the optimal strategies.

Given the following zero-sum game: $\begin{bmatrix} -3 & 4 \\ 1 & -2 \end{bmatrix}$

9) Find the optimal strategy for player I.
(VECTOR FORM)

10) Find the optimal strategy for player II.
(VECTOR FORM)

11) If each entry represents dollars, then find the expected payoff using the optimal strategies.

Given the following zero-sum game: $\begin{bmatrix} 5 & 3 \\ -1 & 1 \end{bmatrix}$

12) Find the optimal strategy for player I.
(VECTOR FORM)

13) Find the optimal strategy for player II.
(VECTOR FORM)

14) When playing a strategy, the player should play it randomly,
which means they should avoid showing _____.

A) Leg Hairs

B) Steve McNair

C) Steve McQueen

D) Movies

E) Off

F) A Pattern