Use pencil, please. 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.
   - A) 
   - B) 
   - C) 
   - D) 
   - E) None of these

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.
   - A) 
   - B) 
   - C) 
   - D) 
   - E) None of these

3) Construct the matrix that defines this game. (Keep the numbers in order – 1- 2 -3)
   - A) 
   - B) 
   - C) 
   - D) 
   - E) None of these

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

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. Round to the nearest penny.

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

6) Find the optimal strategy for player I. (VECTOR FORM)
   - A) 
   - B) 
   - C) 
   - D) 
   - E) None of these

7) Find the optimal strategy for player II. (VECTOR FORM)
   - A) 
   - B) 
   - C) 
   - D) 
   - E) None of these

8) If each entry represents dollars, then find the expected payoff using the optimal strategies. Round to the nearest penny.
Given the following zero-sum game:
\[
\begin{pmatrix}
-3 & 4 \\
1 & -2
\end{pmatrix}
\]

9) Find the optimal strategy for player I. (VECTOR FORM)
   A) \[ \begin{pmatrix}
   \frac{3}{4} & \frac{1}{4}
\end{pmatrix} \]  B) \[ \begin{pmatrix}
   -\frac{3}{10} & -\frac{7}{10}
\end{pmatrix} \]  C) \[ \begin{pmatrix}
   1 & 0
\end{pmatrix} \]  D) \[ \begin{pmatrix}
   0 & 1
\end{pmatrix} \]  E) None of these

10) If playing their optimal strategy, then what percent of the time should player II play column 2?
   A) 10%  B) 20%  C) 40%  D) 60%  E) None of these

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

Given the following zero-sum game:
\[
\begin{pmatrix}
5 & 3 \\
-1 & 1
\end{pmatrix}
\]

12) Find the optimal strategy for player I. (VECTOR FORM)
   A) \[ \begin{pmatrix}
   \frac{3}{8} & \frac{5}{8}
\end{pmatrix} \]  B) \[ \begin{pmatrix}
   \frac{1}{2} & \frac{1}{2}
\end{pmatrix} \]  C) \[ \begin{pmatrix}
   1 & 0
\end{pmatrix} \]  D) \[ \begin{pmatrix}
   0 & 1
\end{pmatrix} \]  E) None of these

13) Find the optimal strategy for player II. (VECTOR FORM)
   A) \[ \begin{pmatrix}
   0.5 \\
   0.5
\end{pmatrix} \]  B) \[ \begin{pmatrix}
   0.75 \\
   0.25
\end{pmatrix} \]  C) \[ \begin{pmatrix}
   1
\end{pmatrix} \]  D) \[ \begin{pmatrix}
   0 \\
   1
\end{pmatrix} \]  E) None of these

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