

For the situation, identify the two players and their possible choices, and construct a payoff matrix for their conflict.

In an attempt to gain more viewers, Channel 86 and Channel 7 are each trying to decide whether to schedule a quiz show or a reality series in their 8:00 prime time slot. Market research indicates that if Channel 86 chooses a quiz show, it will gain 3% of the market if Channel 7 runs a quiz show and lose 8% if Channel 7 runs a reality series, while if Channel 86 chooses a reality series, it will gain 10% if Channel 7 runs a quiz show and lose 10% if Channel 7 runs a reality series. [Hint: Use Q and R for quiz show and reality series.]

		Channel 7	
		Q	R
Channel 86	Q	%	%
	R	%	%

What does Q represent?

- ☐ Q represents a quiz show.
- ☐ Q represents a reality show.

What does R represent?

- ☐ R represents a quiz show.
- ☐ R represents a reality show.

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For the situation, identify the two players and their possible choices, and construct a payoff matrix for their conflict.

Andersonville has two gas stations, Ralph's Qwik-Serv and Charlie's Gas-n-Go. Both Ralph and Charlie are considering raising prices by 1¢, staying with their current prices, or lowering prices by 1¢. If they both make the same choice, there will be no change in their market shares, but if they make different choices, the one with the lower price will gain 5% of the market for each penny difference in their prices.

		Charlie		
		R	S	L
Ralph	R	%	%	%
	S	%	%	%
	L	%	%	%

What does R represent?

- ☐ R represents raising the price by 1¢.
- ☐ R represents keeping the price the same.
- ☐ R represents lowering the price by 1¢.

What does S represent?

- ☐ S represents keeping the price the same.
- ☐ S represents lowering the price by 1¢.
- ☐ S represents raising the price by 1¢.

What does L represent?

- ☐ L represents raising the price by 1¢.
- ☐ L represents keeping the price the same.
- ☐ L represents lowering the price by 1¢.

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3. -/5 pointsBerrFinMath1 8.1.003.

For the game, identify the saddle point and determine the corresponding optimal strategy for each player.

$$\begin{pmatrix} 3 & 8 \\ 2 & 7 \end{pmatrix}$$

The saddle point is the in row and column .

The optimal strategy is for R to always choose row and for C to always choose column .

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Show My Work (Optional) ?

For the game, identify the saddle point and determine the corresponding optimal strategy for each player.

$$\begin{pmatrix} 2 & -1 & 1 \\ 5 & -3 & -5 \end{pmatrix}$$

The saddle point is the in row and column .

The optimal strategy is for R to always choose row and for C to always choose column .

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Show My Work (Optional) ?

5. -/5 pointsBerrFinMath1 8.1.005.

For the game, identify the saddle point and determine the corresponding optimal strategy for each player.

$$\begin{pmatrix} 2 & 1 & 5 \\ -5 & -3 & 6 \\ 3 & -1 & -2 \end{pmatrix}$$

The saddle point is the in row and column .

The optimal strategy is for R to always choose row and for C to always choose column .

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Show My Work (Optional) ?

6. -/5 pointsBerrFinMath1 8.1.006.

For the game, identify the saddle point and determine the corresponding optimal strategy for each player.

$$\begin{pmatrix} 26 & 12 & 6 & 4 \\ 24 & 19 & 21 & 30 \\ 15 & 18 & 22 & 14 \end{pmatrix}$$

The saddle point is the in row and column .

The optimal strategy is for R to always choose row and for C to always choose column .

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Show My Work (Optional) ?

Determine the optimal strategy for the situation by representing it as a game and finding the saddle point. State your final answer in the terms of the original question.

In an ongoing price war between Burger Haven (locally owned) and MacArches (a chain), both restaurant managers plan to change the price of a hamburger by 10¢. If they both raise their prices, there will be no change in their market shares, but if they both lower their prices, the chain's national advertising will ensure that MacArches gains 6% of the market. Again because of advertising, if Burger Haven lowers their price and MacArches raises their price, Burger Haven will gain only 3% of the market, but if Burger Haven raises their price and MacArches lowers their price, MacArches will gain 8% of the market. Use this information to decide what the managers should do.

		MacArches	
		L	R
Burger Haven	L	%	%
	R	%	%

What does L represent?

- ☐ L represents lowering the price by 10¢.
- ☐ L represents raising the price by 10¢.

What does R represent?

- ☐ R represents lowering the price by 10¢.
- ☐ R represents raising the price by 10¢.

The saddle point is the in row and column .

What should the managers do?

- ☐ Burger Haven should lower its prices, while MacArches raises its prices.
- ☐ Both restaurants should lower the price.
- ☐ Both restaurants should raise the price.
- ☐ MacArches should lower its prices, while Burger Haven raises its prices.

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Show My Work (Optional) 

For the situation, identify the two players and their possible choices, and construct a payoff matrix for their conflict.

Andersonville has two gas stations, Ralph's Qwik-Serv and Charlie's Gas-n-Go. Both Ralph and Charlie are considering raising prices by 1¢, staying with their current prices, or lowering prices by 1¢. If they both make the same choice, there will be no change in their market shares, but if they make different choices, the one with the lower price will gain 9% of the market for each penny difference in their prices.

		Charlie		
		R	S	L
Ralph	R	%	%	%
	S	%	%	%
	L	%	%	%

What does R represent?

- ☐ R represents keeping the price the same.
- ☐ R represents lowering the price by 1¢.
- ☐ R represents raising the price by 1¢.

What does S represent?

- ☐ S represents lowering the price by 1¢.
- ☐ S represents keeping the price the same.
- ☐ S represents raising the price by 1¢.

What does L represent?

- ☐ L represents keeping the price the same.
- ☐ L represents raising the price by 1¢.
- ☐ L represents lowering the price by 1¢.

Show My Work (Optional) ?

2. -/5 pointsBerrFinMath1 8.1.003.

For the game, identify the saddle point and determine the corresponding optimal strategy for each player.

$$\begin{pmatrix} 2 & 8 \\ 1 & 5 \end{pmatrix}$$

The saddle point is the in row and column .

The optimal strategy is for R to always choose row and for C to always choose column .

Show My Work (Optional) ?

3. -/5 pointsBerrFinMath1 8.1.004.

For the game, identify the saddle point and determine the corresponding optimal strategy for each player.

$$\begin{pmatrix} 3 & -1 & 2 \\ 4 & -4 & -5 \end{pmatrix}$$

The saddle point is the in row and column .

The optimal strategy is for R to always choose row and for C to always choose column .

Show My Work (Optional) ?

For the game, identify the saddle point and determine the corresponding optimal strategy for each player.

$$\begin{pmatrix} 1 & -1 & 4 \\ -6 & -5 & 6 \\ 3 & -2 & -3 \end{pmatrix}$$

The saddle point is the in row and column .

The optimal strategy is for R to always choose row and for C to always choose column .

Show My Work (Optional) ?

5. -/5 pointsBerrFinMath1 8.1.006.

For the game, identify the saddle point and determine the corresponding optimal strategy for each player.

$$\begin{pmatrix} 28 & 7 & 4 & 3 \\ 25 & 14 & 15 & 30 \\ 11 & 12 & 24 & 9 \end{pmatrix}$$

The saddle point is the in row and column .

The optimal strategy is for R to always choose row and for C to always choose column .

Show My Work (Optional) ?

6. -/8 pointsBerrFinMath1 8.1.008.

Determine the optimal strategy for the situation by representing it as a game and finding the saddle point. State your final answer in the terms of the original question.

A Republican and a Democratic candidate are running for office in a heavily Republican county. A recent newspaper poll comparing their views on taxes and welfare reform showed that when compared on taxes or on welfare reform, the Republican leads by 25%. When comparing the Democrat on welfare reform to the Republican on taxes, the Republican leads by 35%. But when comparing the Democrat on taxes to the Republican on welfare reform, the Republican leads by only 5%. Use this information to decide what each candidate should discuss at their next debate. (Let T represent taxes and W represent welfare reform.)

		Democrat	
		T	W
Republican	$\left\{ \begin{array}{l} T \\ W \end{array} \right.$	$\left(\begin{array}{c} \text{ } \% \\ \text{ } \% \end{array} \right)$	$\left(\begin{array}{c} \text{ } \% \\ \text{ } \% \end{array} \right)$

The saddle point is the in row and column .

What should each discuss at their next debate?

- ☐ They both should discuss welfare reform at their next debate.
- ☐ They both should discuss taxes at their next debate.
- ☐ The democratic candidate should discuss taxes, while the republican candidate discusses welfare reform.
- ☐ The democratic candidate should discuss welfare reform, while the republican candidate discusses taxes.

Show My Work (Optional) ?