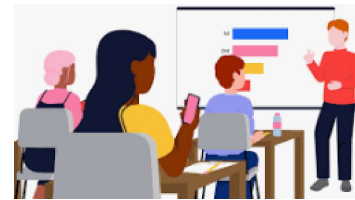


Unit 02-06 - Combinations, Permutations, Binomial Probability**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

- _____ 1. What is meant by a Zero Sum Game?
- a. A game or situation in which always ends with no one winning the game. It's a lose-lose situation. The end result of the game is everyone eventually ends up with zero points or no wealth.
 - b. A game or situation in which everyone starts with zero and gains are made by everyone involved.
 - c. A game or situation in which one person's gain is equivalent to another's loss, so the net change in wealth or benefit is zero.

- _____ 2. In a classroom of 22 students, they are trying to elect a student leader. Two of the twenty students are candidates (*Angie* and *Jackie*) to be elected and are not permitted to vote. The remaining 20 students each must cast a vote for either *Angie* or *Jackie*. Angie and Jackie end up with a tie of 10 votes each. So, they take turns trying to persuade individual class members to flip their vote in order to win. *Angie* persuades 3 students to flip their vote to her and *Jackie* wasn't able to persuade anyone to flip.



Using votes as the benefit, does this situation represent a zero-sum game?

- a. Yes, because there is always a total of 20 votes.
- b. No, because 3 students flipped their vote.
- c. There is not enough information.

_____ 3. Based on the Payoff matrices below which is the only one that represents a **zero-sum game**?

a.

		<i>Option 1</i>	<i>Option 2</i>
<i>(Matt)</i>	<i>Option 1</i>	$-1, 2$	$5, -3$
	<i>Option 2</i>	$2, -1$	$-3, 5$

b.

		<i>Option 1</i>	<i>Option 2</i>
<i>(Matt)</i>	<i>Option 1</i>	$2, 2$	$-1, -1$
	<i>Option 2</i>	$-1, -1$	$2, 2$

c.

		<i>Option 1</i>	<i>Option 2</i>
<i>(Matt)</i>	<i>Option 1</i>	$-2, 2$	$-3, 3$
	<i>Option 2</i>	$1, -1$	$4, -4$

Name: _____

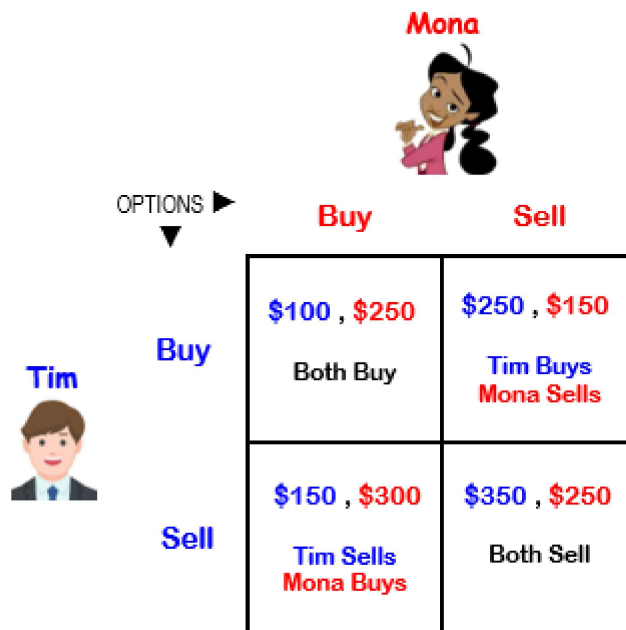
ID: A

4.

Tim and Mona are each considering Buying or Selling a bicycle in the same Neighborhood Garage Sale. The net cash value of what they each decided to do is shown in the matrix.

Based solely on the pay-off matrix which combination of strategies would represent the Nash equilibrium?

(Assuming more money is desired.)



The diagram shows a 2x2 payoff matrix for Tim and Mona. Tim's options are 'Buy' and 'Sell', and Mona's options are 'Buy' and 'Sell'. The payoffs are listed as (Tim's payoff, Mona's payoff). The matrix is labeled with 'Tim' on the left and 'Mona' at the top. The word 'OPTIONS' is written above the matrix with arrows pointing to the strategies.

		Mona	
		Buy	Sell
Tim	Buy	\$100 , \$250 Both Buy	\$250 , \$150 Tim Buys Mona Sells
	Sell	\$150 , \$300 Tim Sells Mona Buys	\$350 , \$250 Both Sell

- Both Buy.
- Both Sell.
- Tim Buys; Mona Sells.
- Tim Sells; Mona Buys.