Name:

**Game Theory Practice**AP Microeconomics Unit IV-Imperfect Competition

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| --- |
|  **COKE**  |
| **PEPSI** |  | Advertise | Don’t Advertise |
| Advertise | 80, 80 | 120, 45 |
| Don’t Advertise | 45, 120 | 100, 100 |

Use the above payoff matrix to answer questions 3-. The first number in each square refers to the payoff for Pepsi. The second number refers to the payoff for Coke.

1. Does Coke have a dominant strategy? Explain.
2. Does Pepsi have a dominant strategy? Explain.
3. If Pepsi doesn’t advertise, what is the best strategy for Coke to use?

Use the following scenario for questions 4-10.

You and Lorna are the only students in Mrs. Jensen’s class. It is the end of the semester, and finals are next week. Mrs. Jensen has said the final exam will be graded so that everyone who scores the class average on the final exam will receive a “B” in the class. Anyone who scores above the average will receive an “A” in the class, and anyone who scores below the average will fail the class. You would certainly score higher on the exam than Lorna. You and Lorna have made an agreement not to take the final exam so that the class average is zero and you both receive “B” grades.

1. Determine the three basic elements of the game
	1. The players:
	2. The strategies for each player:
	3. The payoffs for each player:
2. Create a payoff matrix for this game.
3. What is your dominant strategy?
4. Two competing retail firms, Zoey Stop and Maya Mart, are studying potential locations for new stores in the suburbs of a major city. Each firm must choose between a location east of the city and a location south of the city. The payoff matrix is shown below, with the first entry in teach cell indicating Zoey Stop’s daily profit and the second entry indicating Maya Mart’s daily profit. Both firms know all the information in the payoff matrix.

|  |  |
| --- | --- |
|  |  Maya Mart |
|  Zoey Stop |  | East | West |
| East | $800, $2,100 | $2,800, $4,000 |
| West | $5,100, $4,200 | $1,600, $1200 |

* 1. If Zoey Stop chooses a location east of the city, which location is better for Maya Mart? Explain.
	2. Is choosing a location to the west of the city a dominant strategy for Zoey Shop? Explain.
	3. If the two firms cooperate in choosing locations, where will each firm locate?
	4. Assume that the west suburb has enacted an incentive package to attract new business. Any firm that locates west of the city will receive a subsidy of $2,500 per day. Redraw the payoff matrix to include the subsidy.