

EXERCISES

1. **Jeopardy Questions.** As in the popular television game show, you are given an answer to a question and you must respond with the question. For example, if the answer is “a tax on imports,” then the correct question is “What is a tariff?”
 - a. The term used to describe a country’s countertrade actions in response to its trading partner’s increase in tariffs.
 - b. The name given to a noncooperative solution to an economic game.
 - c. The term used to describe an economic game equilibrium that maximizes the sum of the payoffs to all players.
2. Consider the following trade policy game between two small country governments, Kenya and Ethiopia. The policy choices for each government are either to choose free trade on all imports or to place a 15 percent tariff on all imports. The national welfare payoffs for each country when both choose free trade are given as (100, 100). The first 100 is Kenya’s national welfare; the second is Ethiopia’s.

A Trade Policy Game

		Ethiopia	
		Free Trade	15% Tariff
Kenya	Free Trade	100	80
	15% Tariff	100	100

- a. Based on the tariff analysis for a small importing country and assuming symmetry between the two countries, complete the empty two cells in the table above.
 - b. Based on the numbers you provided in part a, identify which cell corresponds to the Nash (or noncooperative) equilibrium.
 - c. Which cell corresponds to the cooperative equilibrium?
 - d. Does this game help justify a trade liberalization organization like the WTO?
3. Suppose the United States (US) and Costa Rica (CR) are two countries among many others in the world. The US is a large country and thus its import tariffs will lower the price of CR’s exports. CR, however, is a small country, so its tariffs do not affect prices in the US. Assume the US government can choose free trade, optimal tariffs, or 20 percent tariffs. CR can choose free trade, 10 percent tariffs, or 20 percent tariffs on all imports. The national welfare payoffs for each country in five cases are given. The first term is the US’s national welfare; the second is CR’s.

A Trade Policy Game

		CR		
		Free Trade	10% Tariffs	20% tariffs
US	Free Trade	20 100	19 100	18 100
	Optimal Tariffs	18 101		
	20% Tariffs (> Optimal)	17 100		

- a. Use the information provided in the table to complete the four empty cells.
 - b. Among the nine outcomes, which would CR most prefer?
 - c. Among the nine outcomes, which would the US most prefer?
 - d. Identify which cell or cells correspond to a Nash (or noncooperative) equilibrium.
 - e. Which cell corresponds to the cooperative equilibrium?
4. Consider the following trade policy game between two large country governments, the US and the EU. The policy choices for each government are to choose either free trade on all imports or to place an optimal tariff on all imports. The national welfare payoffs for each country when both choose free trade are given as (50, 50). The first term is the US's national welfare; the second is the EU's.

A Trade Policy Game

		EU	
		Free Trade	Optimal Tariffs
US	Free Trade	50 50	55 40
	Optimal Tariffs		

- a. Based on the tariff analysis for a large importing country and assuming symmetry between the two countries, complete the empty two cells in the table.
- b. Among the four outcomes, which would the US most prefer? Which would the EU most prefer?
- c. Identify which cell corresponds to the Nash (or noncooperative) equilibrium.
- d. Which cell corresponds to the cooperative equilibrium?
- e. Does this game help justify a trade liberalization organization like the WTO?