1. The United States and the rest of the world produce large amounts of agriculture. The United States faces the following conditions in agriculture:

Domestic Demand: \( P = -2Q + 100 \)
Domestic Supply: \( P = Q + 10 \)

Assume the United States is a closed economy. What is the domestic equilibrium price and quantity? Label \( P_{us}, Q_{us} \). Solve numerically and sketch the graph.

2. Assume the United States is still a closed economy. How much is quantity demanded? How much is quantity supplied? How much agriculture is exported? How much agriculture is imported? I want numerical answers.

3. You convince Congress to open the United States economy to trade. The world price \( (P_w) \) for agriculture is $20. How much agriculture will American consumers purchase \( (Q_{d2}) \)? How much agriculture will American producers sell \( (Q_{s2}) \)? How much agriculture will be exported? How much agriculture will be imported? I want numerical answers. Sketch the graph in an open economy.
4. Republicans in Congress want to maintain their incumbency, and have second thoughts about this open economy. The farm lobby convinces Congress to impose a $5 per-unit tariff on imported agriculture. How much agriculture will American consumers purchase \((Q_{d3})\)? How much agriculture will American producers sell \((Q_{s3})\)? How much agriculture will be exported? How much agriculture will be imported? How much is government revenue? Calculate deadweight loss. I want numerical answers. Sketch the graph in this open economy with a tariff.

5. Initially, the nominal exchange rate for the dollar is \(e^*\). The Fed lowers the federal funds rate in order to combat a recessionary gap. Assume inflation worldwide stays constant. Does the dollar appreciate or depreciate? How does this affect our trade balance? Sketch the graph, and label the new nominal exchange rate for the dollar \(e_1\).
6. Japan faces a strong Yen at its market-clearing nominal exchange rate. Assume inflation worldwide stays the same. How does this affect Japan’s trade balance? Japan decides to fix the Yen’s nominal exchange rate **below** the market-clearing nominal exchange rate. After Japan fixes its nominal exchange rates, is the Yen under-valued or over-valued? How do you know? What does the Japanese Central Bank need to do in order to maintain its fixed nominal exchange rate for the Yen? Sketch and label the following:

\[(1/e)^* = \text{Initial market-clearing nominal exchange rate for the Yen}\]
\[(1/e)^f = \text{Fixed nominal exchange rate for the Yen}\]
\[(1/e)_2 = \text{New market-clearing nominal exchange rate for the Yen after Japanese monetary policy}\]

7. Japan faces a recessionary gap. Can the Japanese Central Bank both maintain its fixed nominal exchange rate **AND** fight the recessionary gap? Why or why not?