Problem Set 03

Instructions: Answers must be submitted online through the designated Canvas assignment. This Problem Set is due on **November 04 at 01:59pm**. Please write as legible and clearly as possible. You will not be given full credit if your answers cannot be easily understood.

Questions

Variable	No Tariff	+ Tariff on Final Good	+ Tariff on Input Good
Price of Domestic Final Good	2220		
Value of Imported Inputs	670		
Domestic Value-Added	1550		
Effective Rate of Protection, %	0		

1. [10 points] Complete the table above and express the effective rate of protection in **each case**. **Tariffs on the final good are 25% and tariffs on the input good are 12%**. **Show your work in the space provided below**

2. [11 points] Suppose we are in an autarky scenario and considering the market for an imported good at Home. Use the following demand and supply functions for solving the various equilibrium scenarios:

$$\textbf{Demand: } P = 120 - \frac{4}{7}Q_d$$

$$\textbf{Supply: } P = \frac{1}{4}Q_s$$

Consider the **Autarky Scenario** first

(a) [3 points] Sketch the supply and demand curves, with the appropriate labeling for the equilibrium point and surplus regions.

(b) [5 points] Report the coordinates of the equilibrium point, which represent the **price and quantity the market operates at**.

(c) [3 points] Calculate the consumer and producer surplus values under autarky. What is the total welfare for the economy?

3. [11 points] Using the same demand and supply functions as before, answer the following:

$$\textbf{Demand: } P = 120 - \frac{4}{7}Q_d$$

$$\textbf{Supply: } P = \frac{1}{4}Q_s$$

Suppose Home opens up to **free-trade** and becomes exposed to a world price, $P_w = 25$. Be sure to complete every part.

(a) [3 points] Sketch the market with the **new price line** and corresponding equilibria points for **quantity demanded and supplied**.

(b) [5 points] Calculate the equilibrium values for quantities, imports, and surplus values.

(c) [3 points] What is the change in welfare, relative to **autarky**

4. [11 points] Using the same demand and supply functions as before, answer the following:

$$\textbf{Demand: } P = 120 - \frac{4}{7}Q_d$$

$$\textbf{Supply: } P = \frac{1}{4}Q_s$$

Consider the case in which **the government intervenes, setting a tariff rate of** $t = 4$. Be sure to complete every part.

(a) [3 points] Sketch the updated demand & supply curves. Label it properly and highlight which regions are the efficiency and dead-weight loss areas

(b) [5 points] Calculate the equilibria for **quantity supplied, quantity demanded, imports, and surpluses (consumer, producer, government)**.

(c) [3 points] What is the **change in welfare**, relative to free-trade?