1a) ARG-US INDEX of INTRA INDUSTRY TRADE at 1-digit SITC

\[
1 - \frac{8.59}{465.51} - \frac{47.33}{218.05} + \frac{0.28}{465.51} - \frac{3.38}{218.05} + \ldots \text{ etc}
\]

\[
= 1 - \left( \frac{8.59 + 47.33}{465.51 + 218.05} + \frac{0.28 + 3.38}{465.51 + 218.05} + \ldots \text{ etc} \right)
\]

\[
= 1 - \left( \frac{0.018 - 0.217}{0.018 + 0.217 + 0.001 + 0.016} + \ldots \right)
\]

\[
= 0.272
\]

Likewise, through similar calculations, CAN-US IIT = 0.810

New trade theory models trade flows in industries where product differentiation is important and some good/industry I would expect this to occur more between countries of similar development, such as the US and Canada. Thus, a higher IIT for Canada and the US than for Argentina and the US is expected.

1b) ARG-US INDEX of INTRA INDUSTRY TRADE at 2-digit

\[
1 - \frac{59}{465514} - \frac{688}{218051} + \frac{301}{465514} - \frac{11038}{218051} + \ldots \text{ etc}
\]

\[
= 0.202
\]

As we define industries more narrowly (eg from 1-digit to 2-digit), we should expect to see less trade characterized as "intra-industry". So the fall in the IIT as we go from 1-digit to 2-digit is expected.
(2) a) \( \text{In equilibrium } Q_D = Q_S \)

\[ 35 - P = \frac{1}{2} P - \frac{5}{2} \]

\[ \frac{75}{2} = \frac{3}{2} P \]

\( P_a = 25 \) \( \Rightarrow \)

\[ Q_D = 35 - P \]

\[ = 35 - 25 \]

\[ Q_D = Q_S = Q^*_A = 10 \]

b) At \( P^* = 15 \):

\[ Q_D = 35 - 15 = 20 \]

\[ Q_S = \frac{1}{2}(15) - \frac{5}{2} = 5 \]

\[ \text{Imports } (m) = Q_D - Q_S \bigg| \text{at } P^* = 15 \]

\[ = 15 \]

c) With 20% tariff, new price faced by Chileans:

\[ P^*(1 + t) = 15(1 + 0.2) = 15(1.2) = 18 \]

At \( P^*(1 + t) = 18 \)

\[ Q_D = 35 - 18 = 17 \]

\[ Q_S = \frac{1}{2}(18) - \frac{5}{2} = 6.5 \]

\[ \Rightarrow m_1 = 10.5 \]
Tariff revenue = Area of C = \((18-15) \times (17-6.5)\)
\[= \frac{3}{2} \times 10.5 \times 10.5\]
\[= 31.5 \text{ million pesos}\]

Producer surplus = \((18-15) \times (5-0) + \frac{1}{2} \times (18-15) \times (6.5-5)\)
\[= 3 \times 5 + \frac{3}{2} \times 3 \times 1.5\]
\[= 15 + 6.75 = 21.75 \text{ million pesos}\]

DW loss = \(\frac{1}{2} \times (18-15) \times (6.5-5) + \frac{1}{3} \times (18-15)(20-17)\)
\[= 3.25 + 4.5\]
\[= 7.75 \text{ million pesos}\]

Lost consumer surplus = \(a + b + c + d\) = 31.5 + 17.25 + 6.75 = 55.5 \text{ million pesos}\
At \( t = 0.07 \Rightarrow p^*(1+t) = 25.05 > 25 = P_a \)

\( \Rightarrow \) The autarky price is in effect \( \Rightarrow \) No imports!

\[ \text{Tariff Revenue} = \text{(Per unit)} \times \text{(Imports)} = 0 \]

Since \( \text{Imports} = 0 \)

\[ \begin{align*}
\text{Diagram:} & \\
\text{Condition:} & \\
\text{Point:} & \\
\text{Calculation:} & \\
\text{Result:} & \\
\end{align*} \]

\( \text{DW Loss} = b + d \) (Notice \( b \) and \( d \) take up all the space that used to comprise \( b, c, \) and \( d \))

\[ \frac{1}{2} \cdot 5 \cdot 10 + \frac{1}{a} \cdot 10 \cdot 10 = 75 \text{ million pesos} \]

This deadweight loss when going from free trade to autarky must correspond to the gains from trade when a country goes from autarky to free trade!
Mathematically,

Excess Demand = \( Q_D - Q_S \)

= \( 35 - P - (\frac{1}{2}P - \frac{5}{2}) \)

= \( 37.5 - \frac{3}{2}P \)

until \( P = 5 \)