3. Sugar is freely traded in the world market. Assume that a country, Loriland, is a price taker in the world market for sugar. Some of the sugar consumed in Loriland is produced domestically while the rest is imported. The world price of sugar is $2 per pound. The graph below shows Loriland's sugar market, and P_W represents the world price.
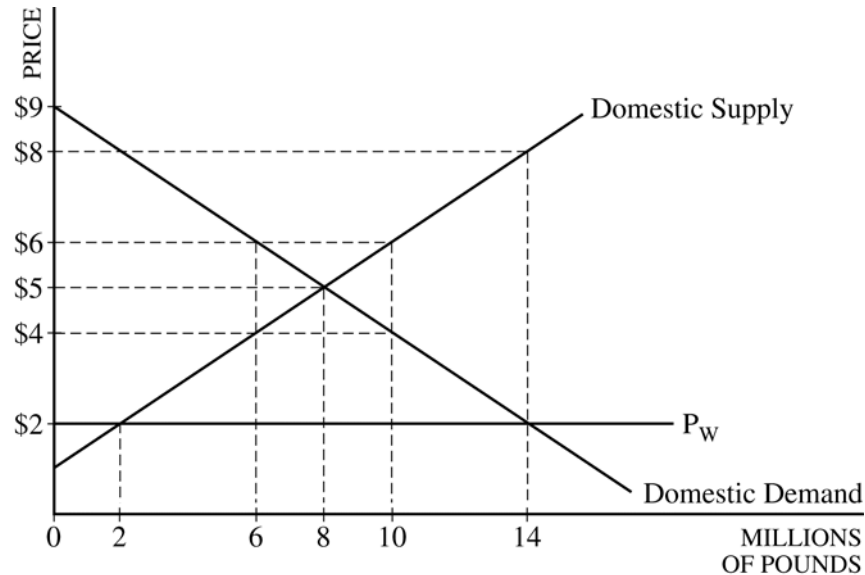
(a) At the world price of $2 per pound, how much sugar is Loriland importing?

(b) Suppose that Loriland imposes a per-unit tariff on sugar imports and the new domestic price including the tariff is $4.

   (i) Identify the new level of domestic production.

   (ii) Calculate the domestic consumer surplus for Loriland. You must show your work.

   (iii) Calculate the total tariff revenue collected by the government. You must show your work.

(c) Given the world price of $2, what per-unit tariff maximizes the sum of Loriland's domestic consumer surplus and producer surplus?

STOP

END OF EXAM

5 points (1 + 3 + 1)

(a) 1 point:
- One point is earned for stating that Loriland is importing 12 million pounds.

(b) 3 points:
- One point is earned for identifying the new level of domestic production as 6 million pounds.
- One point is earned for calculating the domestic consumer surplus as $25 million and showing the work: ½ [($9 - $4) × 10] = $25
- One point is earned for calculating the revenue from the tariff as $8 million and showing the work: ($4 - $2) (10 - 6) = $8.

(c) 1 point:
- One point is earned for identifying the per-unit tariff that maximizes the sum of consumer and producer surplus as $0.