Question 2 C:
Assume the government imposes a specific tax of 2$ per unit on product X. Calculate the new equilibrium price.

Table 1:

Q demanded - Product X	Price $ of Product X	Q supplied-Product X
3000	7$	9000
4000	6$	8000
5000	5$	7000
6000	4$	6000
7000	3$	5000
8000	2$	4000
9000	1$	3000

See page 2 for advice on this question: There are 2 options to consider in arriving at the answer. Option 1 or 2 are the easiest + best approaches (in this case a calculation using the equation of a line in NOT required).

2 Options: Answer = 5$

Table 2:

Qd (unchaged)	Price $ (- tax)	Qs	Adjusted supply
3000	7$ (- 2)	~~9000~~	7000
4000	6$ (- 2)	~~8000~~	6000
5000	5$ (− 2)	~~7000~~	5000
6000	4$ (-2)	~~6000~~	4000
7000	3$ (-2)	~~5000~~	3000
8000	**2 (- 2) = 0**	**4000**	**no benefit for firm**
9000	**1 (- 2) = -1**	**3000**	**no benefit for firm**

Option 1: Use the table supplied in the question to find the answer.

As a result of the tax the lowest possible price for firm to sell is now 3$ because the firm cannot sell at a price of 1$ or 2$ because the revenue for the firm would be -1 at a price of 1$ or 0 at a price of 2$. This makes no sense for the firm. The firm will therefore not supply any quantity less than 3$ and at 3$ it can supply 3000 units.

Therefore, the lowest possible price for a firm is now 3$ and at this price the firm will supply 3000 units as per the original supply line i.e. at a price of 1$ the firm was able to supply 3000 units. The production costs for the firm has not changed because of the tax. Only the tax has played a role here causing the price to rise. Supply conditions remain the same. To supply 3000 units now the firm must charge a price of 3$. Supply curve shifts upwards to the left as an indirect tax causes an upward shift. The lines are drawn parallel as the tax is specific (flat rate) of 2$ per unit.

Now use the adjusted table 2 to find the equilbrium i.e. supply = demand at a price of 5$.

Option 2: Plot/Draw the diagram. You can also use this approach if you draw the diagram accurately and show the shift of supply will cause a movement in demand. The combination of the two changes will see the change to a price of 5$ and a quantity of 5.000. (A change to a price of 6$ is not correct as it suggests that the quantity demanded will remain the same at the higher price caused by the tax. This is not the case and a movement in demand will occur causing a smaller equilibrium quantity as the market gets smaller following the tax.).

The thing to be careful of here is not to assume the new equilibrium price will move vertically from 4$ to 6$ at original equilibrium quantity of 6000 units. The 2$ tax is not accepted by the market and the higher price causes price to shift diagonally upwards to a price of 5$. Use your diagram to understand this. A deadweight loss triangle occurs (loss of quantity to market) and equilibrium shifts upwards to the left from the original equilibrium of 4$.

Alternative Option 3: prove mathematically (not required in syllabus)

- Demand line: Write the equation of the line for the demand. (Price = m (slope) demand+C (y- intercept).
- Supply line: Write the equation of the line for the supply without tax. (Price = m (slope) supply without tax+C (y-intercept).
- Supply line + tax: Write the equation of the line for the supply with tax. (Price = m (slope) supply with tax +C (y-intercept).
- Find the intersection between the demand line and supply line for the original equilibrium.
- Find the intersection between the demand line and the supply + tax line for new equilibrium.

Use the following link to understand how the equation of a line applies to a supply function. Note this example highlights how the math is applied to economics.
https://www.youtube.com/watch?v=H83dHEnG2B0

Maybe talk to your math teacher about how to use the equation of a line to reach the answer! Calculator is allowed in the exam.