Consider a competitive market for a private good, with linear demand and supply curves. In market equilibrium, the demand and supply curves cross at point \( E \).

a. The figure below shows the demand and supply curves. Fully label the axes and curves.

b. In the figure, clearly identify and label the amount of social surplus when the market is in equilibrium.

c. Suppose changes in technology and factor prices lead to a new linear supply curve that also passes through point \( E \) and that is more elastic than the original supply curve. Add this new supply curve to the figure.

d. Clearly identify and label the amount of social surplus that the market provides now. In a sentence, compare the new social surplus with the original social surplus.
2. Consider the case of a positive consumption externality, which is discussed briefly in the text. An example of this occurs in the private market for flu shots, when other people benefit (through reduced spread of illness) if a person buys a flu shot. (This benefit is called an “external effect”.)

a. Draw and fully label the supply and demand diagram for the private market for flu shots, taking no account of the external effect of the shots. Clearly show and label the private-market equilibrium quantity of flu shots.

b. Now taking account of the external effect, determine and label the socially efficient level of flu shots for the economy. As part of doing this, add a curve or curves to the figure, as appropriate, with clear labeling. Explain briefly how the new curve is determined (or, how the new curves are determined).

c. In your figure, clearly show and label the amount of potential social surplus that is lost (i.e., is not attained) when the flu-shot market operates privately.