Question 3

6 points \((2 + 2 + 2)\)

(a) 2 points:
- One point is earned for showing a rightward shift of the demand curve.
- One point is earned for showing that equilibrium price increases and quantity increases.

(b) 2 points:
- One point is earned for showing a rightward shift of the supply curve.
- One point is earned for showing that equilibrium price decreases and quantity increases.

(c) 2 points:
- One point is earned for indicating that MSC is greater than MPC.
- One point is earned for stating that the conversion of land to residential development is not socially optimum because MSC>MSB (P).
Write in the box the number of the question you are answering on this page as it is designated in the examination.

3)

\[ S_1 \]

\[ P_1 \]

\[ P_2 \]

\[ Q_1 \]

\[ Q_2 \]

\( \text{Quantity of Land for residential development (acres)} \)

\( \uparrow \text{Income} \Rightarrow \uparrow \text{Disposable Income} \Rightarrow \uparrow \text{Demand for land (shift outward of D curve)} \Rightarrow \uparrow \text{Equilibrium price from } P_1 \text{ to } P_2, \uparrow \text{Equilibrium quantity from } Q_1 \text{ to } Q_2 \)

\[ S_2 \]

\[ P_1 \]

\[ P_2 \]

\[ Q_1 \]

\[ Q_2 \]

\( \text{Quantity of Land for residential development (acres)} \)

\( \text{Change in gov. per-unit subsidies to farmers } \Rightarrow \uparrow \text{Supply of farmland to be converted to residential development (outward/right shift in supply curve)} \Rightarrow \downarrow \text{Equilibrium} \)
price from \( P_1 \) to \( P_2 \). Increase in equilibrium quantity from \( Q_1 \) to \( Q_2 \).

C) (i) The marginal social cost of converting land is greater than the marginal private cost of converting land because there is a negative externality (loss of scenic vistas) from converting land.

(ii) The private market quantity of land converted into residential development is not socially optimal. Specifically, the quantity of land converted is too much.

The fact that MSC curve lies above MPC indicates that MSC is greater than MPC at every point along the D curve. Producing where \( MPC = D \) creates too high of an output.
Write in the box the number of the question you are answering on this page as it is designated in the examination.

3

The socially optimal level of output occurs where the D curve intersects the MSC curve, at a smaller output.
Write in the box the number of the question you are answering on this page as it is designated in the examination.

\[ \text{Qe, Q}_{1} \text{ Q of land} \]

\[ \text{Q}_{1}, \text{Qe} \text{ Q of land} \]

c) \( m = \text{marginal social cost} > \text{marginal private cost} \)

It is socially optimal because it provides a scarce resource, in this case it's land, for the building of residential homes. Since the population is increasing, places to live are becoming scarce, so this would provide more supply of homes which benefits society.
Write in the box the number of the question you are answering on this page as it is designated in the examination.

**Question #3**

(a) It will cause an outward shift in the demand curve because people have more $ to spend.

(b) Farmers will now supply more at a lower price because it is costing them less fuel.

(c) It is equal to that of marginal private cost. Although these people may not have such beautiful scenery, they now have better places to live and work.

(ii) Yet, the private market quantity of land converted into residential development is socially optimal. Even though there is a few disadvantages and opportunity costs, everybody benefits.
Question 3

Overview

The purpose of the question was to test students’ understanding of supply and demand and the effect of an external cost on allocative efficiency (a socially optimal outcome).

Sample: 3A
Score: 6

The student received full credit.

Sample: 3B
Score: 4

The student earned both points in part (a). The student earned 1 point in part (b) for showing the change to the equilibrium price and quantity that is consistent with the incorrect shift of the supply curve. One point was awarded in part (c) for correctly stating that MSC>MPC.

Sample: 3C
Score: 2

The student earned 1 point in part (a) for correctly shifting the demand curve, and 1 point in part (b) for correctly shifting the supply curve.