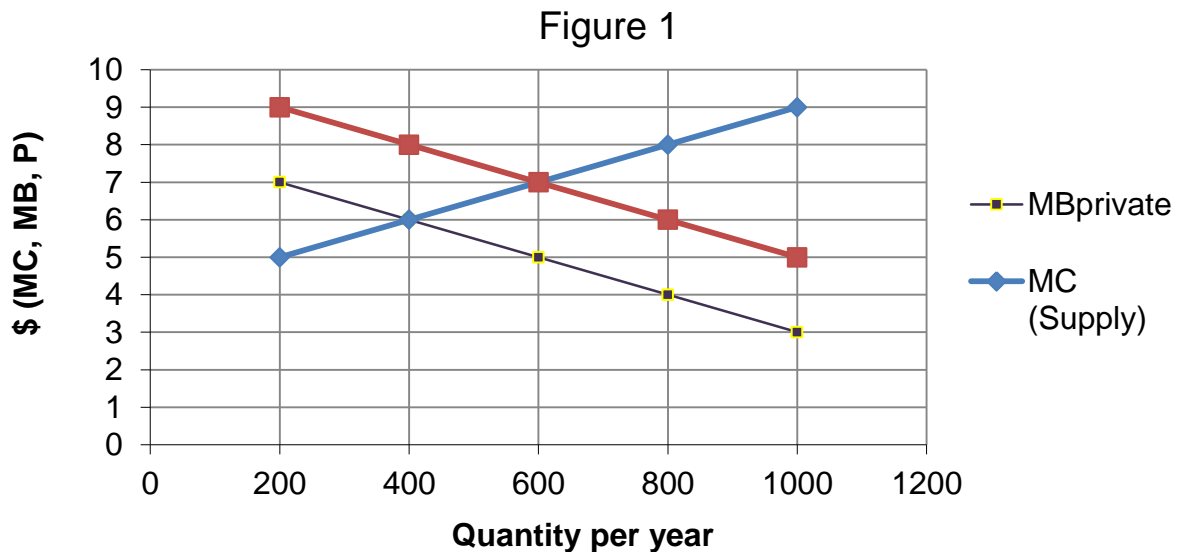


The table below shows the marginal benefits and costs of garden flower production and consumption in Bozeman per year.

Quantity Produced & Planted (flats of flowers per year)	Private Marginal Costs (Supply)	Private Marginal Benefits ($MB_{private}$)
200	5	7
400	6	6
600	7	5
800	8	4
1000	9	3

- Graph the Supply and Private Marginal Benefit curves in Figure 1. Be sure to label the curves.



- Based on these private costs and benefits, what will be the equilibrium price of flat of flowers in Bozeman?

The market equilibrium will occur where the $MB_{private}$ and MC costs curve intersect, at $P = \$6.00$ per flat.

- Based on these private costs and benefits, what will be the equilibrium quantity of flats of flowers per year?

The market equilibrium will occur where the $MB_{private}$ and MC costs curve intersect, at $Q = 400$ flats per year.

4. Are there likely to be positive externalities associated with flower garden production and consumption in Bozeman? If so, describe some of them. If not, explain why not?

Yes. Flower gardens can provide utility to neighbors and passersby, can raise property values, and can attract pollinating insects into neighbors' yards.

5. Suppose that an economist estimates that the positive externalities associated with flower garden production and consumption in Bozeman average \$2.00 per flat of flowers sold and planted. Based on this finding, complete the "Social Marginal Benefits" column of the table below.

Quantity Produced & Planted (flats of flowers per year)	Private Marginal Costs (Supply)	Private Marginal Benefits ($MB_{private}$)	Social Marginal Benefits (MB_{social})
200	5	7	9
400	6	6	8
600	7	5	7
800	8	4	6
1000	9	3	5

6. Plot the social marginal benefits curve in Figure 1, label it MB_{social} .

7. Based on the social costs and benefits, what is the socially optimal price of a flat of flowers?

The socially optimal price will occur where the MB_{social} and MC costs curve intersect, at $P = \$7.00$ per flat.

8. Based on the social costs and benefits, what is the socially optimal quantity of flats of flowers produced and planted per year?

The socially optimal quantity will occur where the MB_{social} and MC costs curve intersect, at $Q=600$ flats of flowers per year.

9. If the socially optimal quantity of flats of flowers differs from the privately optimal quantity of flats of flowers, propose a method to get from the privately optimal level of flower production and planting to the socially optimal level of flower production and planting.

A subsidy of \$2 per flat of flowers would move the market to the social optimum. Alternatively, the city could provide homeowners with flats of flowers for them to plant.