

the social demand curve for both drugs and label the social loss in each case.

c Explain intuitively why, all else equal, social loss is greater in the case of elastic demand than it is in the case of inelastic demand.

13 Secondhand smoke I. Assume that the daily demand for packs of cigarettes in the tobacco-addicted nation of Pcoria is

$$Q = 100 - P$$

Further assume that the marginal cost of producing a pack of cigarettes is \$6, and that the market for cigarettes is perfectly competitive. Assume that each pack of cigarettes smoked does \$6 worth of health damage to the smoker in the form of increased cancer risk and a total of \$5 worth of health damage to the smoker's neighbors via secondhand smoke. Finally, assume that all Pcorian cigarette consumers are aware of these costs.

- a Assume that a Pcorian smoker named Jay states that he is willing to buy a pack of cigarettes for \$8, but not a penny more. In this market, where the price is \$6 per pack, what are the private benefits and private costs incurred whenever he buys a pack of cigarettes? Is it privately efficient for him to buy a pack of cigarettes at this price?
- b What about the public benefits and public costs? Is it socially efficient for him to buy a pack of cigarettes at this price?
- c Suppose that, due to the introduction of a hyper-effective tobacco fertilizer, the cost of producing a pack of cigarettes plummets to \$1. Now is it socially efficient for Jay to purchase a pack of cigarettes?
- 4 Secondhand smoke II.** Review the assumptions from the previous problem, and assume that it still costs \$6 to produce a pack of cigarettes.
- a Draw the private supply curve and the private demand curve in this market. What is the privately efficient quantity of packs purchased per day?
- b Draw the public supply curve in this market. Explain.