

EE211 HW 1 Answers (Chapter 5 question 10)

#10 Consider public policy aimed at smoking.

- a. Studies indicate that the price elasticity of demand for cigarettes is about 0.4. If a pack of cigarettes currently costs \$5 and the government wants to reduce smoking by 20 percent, by how much should it increase the price?
- b. If the government permanently increases the price of cigarettes, will the policy have a larger effect on smoking one year from now or five years from now?
- c. Studies also find that teenagers have a higher price elasticity of demand than adults. Why might this be true?

a. With a price elasticity of demand of 0.4, reducing the quantity demanded of cigarettes by 20% requires a 50% increase in price, because $20/50 = 0.4$. With the price of cigarettes currently \$5, this would require an increase in the price to \$8.33 a pack using the midpoint method (note that $(\$8.33 - \$5)/\$6.67 = .50$).

b. The policy will have a larger effect five years from now than it does one year from now. The elasticity is larger in the long run, because it may take some time for people to reduce their cigarette usage. The habit of smoking is hard to break in the short run.

c. Because teenagers do not have as much income as adults, they are likely to have a higher price elasticity of demand. Also, adults are more likely to be addicted to cigarettes, making it more difficult to reduce their quantity demanded in response to a higher price.