

Problem 1:

For each of the following pairs of goods, which good would you expect to have more elastic demand and why?

- a. required textbooks or mystery novels
- b. Beethoven recordings or classical music recordings in general
- c. subway rides during the next 6 months or subway rides during the next 5 years
- d. root beer or water

Problem 2:

Suppose the demand curve for a product is given by $Q = 10 - 2P + Ps$

where P is the price of the product and Ps is the price of a substitute good. The price of the substitute good is \$2.00.

- a. Suppose $P = \$1.00$. What is the price elasticity of demand? What is the cross-price elasticity of demand?
- b. Suppose the price of the good, P , goes to \$2.00. Now what is the price elasticity of demand? What is the cross-price elasticity of demand?

Problem 3:

A battery company has a demand function of:

$$Q_x = 10000 - 200P_x + 0.1I + 0.5A - 200P_v$$

where Q_x is the quantity demanded per month for batteries, P_x is the price per pair of batteries, I is the average consumer's income, A is the advertising budget per month, and P_v is the price of a flashlight. At the time, $P_x = 5$, $I = 15000$, $A = 5000$ and $P_v = 10$.

- a. Compute price elasticity of demand? State the meaning of result.
- b. Compute income elasticity of demand? State the meaning of result. Is battery normal or inferior good?
- c. Compute elasticity of demand for variable A ? State the meaning of result.
- d. Compute cross price elasticity of demand? State the meaning of result. Are battery and flashlight substitute or complement?
- e. Find the battery price that company receives maximum revenue?