Price Elasticity of Demand: U.S. Demand for Gasoline

The price elasticity of demand measures the responsiveness of the demand for a particular commodity to a change in its price.

1. The formula for the price elasticity of demand is

$$E(p) =$$

When you calculate $E(p)$ for a particular commodity at a given price $p$, you get a number. What does that number tell you about the commodity? What are the units on the answer? (See Lecture Notes 5.6.)

When a commodity is elastic, buyers change / do not change their buying habits when the price changes.

Conversely, when a commodity is inelastic, buyers change / do not change their buying habits when the prices change.

2. Milk If the price of milk were increased, do you think consumers would change their buying habits? Give a reason to support your guess. Answer in sentences.

When the price of milk is $4.00 per gallon, the U.S. consumes approximately 430 thousand gallons of milk per day. Suppose that at this price, the price elasticity of demand for milk is approximately 0.75.

a. This means if price is raised by ______ percent, the demand for milk will increase / decrease by approximately ______ percent.

b. If the price were currently $4.00 per gallon, and sellers raised the price by 1%, the new price would be ______ (include units). In this case, the demand would be reduced to ______________________ (include units).

c. Milk is an elastic / inelastic commodity.

3. Private Helicopters If the price of a private helicopter were increased, do you think consumers would change their buying habits? Give a reason to support your guess. Answer in sentences.

When the price of a particular two-seat helicopter is $450,000, the manufacturer sells approximately 400 helicopters per year. Suppose that at this price, the price elasticity of demand for this type of helicopter is approximately 3.

a. This means if price is raised by ______ percent, the demand for these helicopters will increase / decrease by approximately ______ percent.

b. If the price were currently $450,000, and sellers raised the price by 1%, the new price would be __________ (include units). In this case, the demand would be reduced to ______________________ (include units).

c. These helicopters are an elastic / inelastic commodity.
4. Consider the two price-demand graphs below. The labels give the x-value.

Which graph represents a commodity that is elastic at a price of $100 per unit, and which represents a commodity that is inelastic at $100 per unit? Label the graphs and explain how can you tell. Answer in sentences, and include numerical values to substantiate your claims.

Each quote below describes consumer demand as it is related to the price of a commodity. Decide if the quote indicates that the commodity elastic or inelastic. Explain your conviction in sentences.

5. **Coffee** In the article "Coffee Cravers Ignoring Bean-Price Surge for Caffeine Fix" on Bloomberg.com [1], Doreen Cappelli is quoted to say, “I don’t drink wine and alcohol,” Cappelli, 52, said after buying the $3.25 drink at Blue Bottle Coffee at San Francisco’s Ferry Building, in the shadow of the Bay Bridge. “Coffee is one of my pleasures in life. I would pay double.”

*Does Doreen's behavior indicate that coffee is an inelastic commodity, or an elastic commodity at that price?*
Math 115 Excel Group Project 3 Worksheet
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6. **Jewelry** This quote is from the article "Americans Snap Up Gold Jewelry as Metal's Price Sinks," in MoneyNews.com [2]: "I always look for the price of gold in the news and pay attention to discounts and deals," John Mora Gonzalez, a 31-year-old mechanic in New York, said after purchasing a necklace for his wife for Christmas. Mora had spotted J.C. Penney Co.’s 20-percent discount on fine jewelry, and paid $40 for a 10-karat gold necklace."

*Does John's behavior indicate that gold jewelry is an inelastic commodity, or an elastic commodity at the current prices?*

7. **Music** This quote by Phil Leigh, senior analyst for Inside Digital Media is from the article, "Music download prices rising?" from CNN Money [3]: "If the labels really want to fight piracy, it defies logic to increase prices and create more of a disincentive for the consumer to use legitimate providers. If they want to encourage the public to use legitimate online pricing, raising prices is about the last thing they should think of doing."

*Does Phil consider music an inelastic or an elastic commodity at current prices?*

**References**
   (In that article, Phil Leigh was also quoted saying, "I think whoever came up with this idea understands the online music industry about as well as a cow understands algebra.")