

## Practice Problems 2 - Elasticity

Econ 300 G AU08

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Perloff Chapter 3 Problems: 28, 30, 31, 33

**P1:** Suppose that the long-run world demand and supply elasticities of crude oil are -0.906 and 0.515 respectively. The current long-run equilibrium price is \$30 per barrel and the equilibrium quantity is 16.88 billion barrels per year.

- a. Derive the linear long-run demand and supply equations.
  
- b. Suppose the long-run supply curve you derived in part a) above consists of competitive supply and OPEC supply. If the long-run competitive supply equation is  $Q_c^s = 7.78 + 0.29p$ , what must be OPEC level of production in this long-run equilibrium?

**P2:** The following are some price and income elasticities for food

Type of food	Own-price	Cross-price	Income
Cereal products	-0.94	-0.05	0.19
Milk/Cream	-0.36	-0.05	0.05

- A. What is the relationship between cereal and milk, are they substitutes or complements?
  
- B. Given these elasticities, if the price of cereal rises 10%, while income and the price of milk/cream stay constant, what happens to the level of quantity demand of cereal?
  
- C. What happens to the quantity demanded of milk/cream given the price of cereal increases by 10%, income increases by 10% and the price of milk/cream stays constant?