

1. Soja Farm is a typical profit-maximizing firm that produces and sells soybeans in a constant-cost, perfectly competitive market that is in long-run equilibrium. The market equilibrium price of soybeans is \$14 per bushel.
- (a) Draw correctly labeled side-by-side graphs for the soybean market and for Soja Farm, and show each of the following.
- (i) The market equilibrium price and quantity, labeled \$14 and Q_M , respectively
 - (ii) Soja Farm's profit-maximizing price and quantity, labeled P_F and Q_F , respectively
 - (iii) Soja Farm's average total cost curve consistent with a long-run equilibrium, labeled ATC
- (b) If Soja Farm is the only firm in the market that chooses to increase its price of soybeans to \$15 per bushel, will Soja Farm's total revenue increase by \$1, remain the same, or decrease to \$0? Explain.
- (c) Soybeans are used as an input in the production of tofu. Tofu now becomes a more popular food option among consumers. On your graphs in part (a), show the short-run effect of the increased popularity of tofu on each of the following.
- (i) The new market equilibrium price and quantity of soybeans, labeled P_2 and Q_2 , respectively
 - (ii) Soja Farm's new profit-maximizing quantity, labeled Q^*
- (d) Given the increase in popularity of tofu in part (c), what will happen to the number of firms in the soybean market in the long run? Explain.
- (e) Suppose a 25% increase in the market price of quinoa causes a 5% decrease in the quantity demanded of quinoa and a 10% increase in the quantity demanded for tofu.
- (i) Is the demand for quinoa elastic, inelastic, or unit elastic? Explain using numbers.
 - (ii) Calculate the cross-price elasticity of demand between quinoa and tofu. Show your work.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.