3. a. Coffee supply declines from $S_1$ to $S_2$. Equilibrium price increases from $P_1$ to $P_2$; equilibrium quantity declines from $Q_1$ to $Q_2$.

b. Since the price of a substitute has fallen, demand for coffee should fall.
Demand declines from \( D_1 \) to \( D_2 \). Equilibrium price and quantity decline from \( P_1, Q_1 \) to \( P_2, Q_2 \).

c. An increase in wages for coffee workers should result in a decrease in supply.

d. This announcement would undoubtedly cause a decline in demand, resulting in a lower equilibrium price and quantity.

e. If consumers expect higher coffee prices in the future, they would try to stock up on coffee now, causing an increase in current demand. If producers, too, expect the price to rise, they may withhold coffee, waiting to sell it at higher prices later. This will cause a decrease in supply. The combined effect of the shifts in supply and demand is a rise in equilibrium price. The equilibrium quantity, however, could rise or fall, depending on which shift is greater.
5. a. See graph below.

b. Equilibrium price = $1.40; Equilibrium quantity = 140

c. Since cars and gasoline are complements, a rise in car prices will lead to a decline in demand for gas, as illustrated below:
6. a. Since denim is a major input into the production of jeans, an increase in the price of denim would lead to a leftward shift of the supply curve, which would result in a higher equilibrium price, and a lower equilibrium quantity.

b. An increase in immigration would increase the supply of labor, especially the low-skilled, low-wage labor often employed in the garment industry. Wages in that industry could be expected to decline, leading to a rightward shift in the supply curve for jeans, among other clothes. Equilibrium quantity increases, equilibrium price falls. (Note: since new immigrants will also likely buy blue jeans, the demand for jeans would also increase. This effect is not shown.)
c. Assuming jeans are a normal good (this seems a plausible assumption given current fashion), a decline in income would result in a decline in demand; equilibrium price and quantity both decrease.

8. The mistake is in the assumption that a lower price will lead to a decrease in supply, which will shift the supply curve leftward. Actually, a lower price will lead to a decrease in quantity supplied, which is shown by sliding down to the left along the existing supply curve. This will result in a lower equilibrium price and a smaller equilibrium quantity traded.

9. a. As the supply of A falls, the price of A rises and the quantity traded of A falls. Consumers respond to the higher price of A by demanding more of B, which is a substitute for A. As the demand for B increases, the price of B increases and the quantity traded of B increases.
b. This change in tastes causes the demand for A to fall and the demand for B to rise. These shifts lead to a lower price and a smaller quantity traded for A, and to a higher price and a larger quantity traded for B.

c. Higher incomes cause the demand for A to rise and the demand for B to fall. These shifts lead to a higher price and a larger quantity traded for A, and to a lower price and a smaller quantity traded for B.

d. The technological advance in the production of B causes the supply of B to increase, leading to a lower price and a larger quantity traded for B. As the price of B falls, consumers buy more of B and more of A. Therefore, demand for A increases, leading to a higher price and a larger quantity traded of A.