4. Given the following data on gasoline supply and demand,
   (a) What is the equilibrium price?
   (b) How large a market shortage would exist if government set a price ceiling of $2 per gallon?

Price per gallon	$5.00	$4.00	$3.00	$2.00	$1.00
Quantity demanded (gallons per day)					
Al	1	2	3	4	5
Betsy	0	1	1	1	2
Casey	2	2	3	3	4
Daisy	1	3	4	4	6
Eddie	1	2	2	3	5
Market total	—	—	—	—	—

	$5.00	$4.00	$3.00	$2.00	$1.00
Quantity supplied (gallons per day)					
Firm A	3	3	2	2	1
Firm B	7	5	3	3	2
Firm C	6	4	3	3	1
Firm D	6	5	3	2	0
Firm E	4	2	2	2	1
Market total	—	—	—	—	—

6. Illustrate what's happening to oil prices in the World View on page 63.

Oil Market

PRICE (per barrel)

QUANTITY (barrels per day)
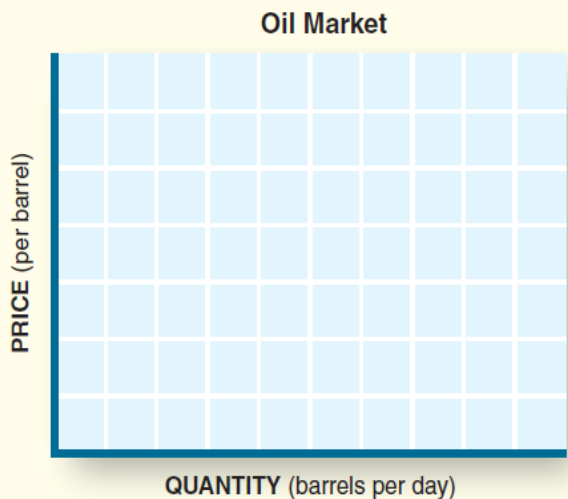
(a) Which direction did the demand curve shift (left or right)?
(b) Which direction did the supply curve shift (left or right)?
(c) Did price (A) increase or (B) decrease?

A Supply Shift. Figure 3.7*b* illustrates a *supply* shift. The decrease (leftward shift) in supply might occur if some on-campus webheads got sick. Or approaching exams might convince would-be tutors that they have no time to spare. ***Whenever supply decreases (shifts left), price tends to rise,*** as in Figure 3.7*b.*

The rock band U2 learned about changing equilibriums the hard way. Ticket prices for the band's 1992 tour were below equilibrium, creating a *market shortage.* So U2 raised prices to as much as $52.50 a ticket for their 1997 tour—nearly double the 1992 price. By then, however, demand had shifted to the left due to a lack of U2 hits and an increased number of competing concerts. By the time they got to their second city they were playing in stadiums with lots of empty seats. The apparent *market surplus* led critics to label the 1997 "Pop Mart" tour a disaster. For their 2001 "Elevation Tour," U2 offered "festival seating" for only $35 in order to fill stadiums and concert halls. Demand shifted again in 2005. Buoyed by a spike of new hit songs (e.g., "Beautiful Day"), demand for U2's "Vertigo Tour" far outstripped available supply, sending ticket prices soaring (and scalpers celebrating). This is the kind of trial-and-error process that ultimately establishes an equilibrium price. For their ongoing 360-degree world tour, U2 cut prices again to assure filling even more concert seats.

Commodity prices are much faster to adjust than are rock bands. In the world oil market, for example, prices change daily as various forces shift market demand and supply curves. In early 2011, an increase (rightward shift) in market demand, together with a decrease (leftward shift) in market supply, pushed up the equilibrium prices of oil and gasoline, as the accompanying World View reports.

WORLD VIEW

Gas Prices High—and Might Get Higher

NEW YORK (CNNMoney)—Strong worldwide oil demand and lack of supply are to blame for steadily rising gasoline prices in the United States, an oil industry group said Friday. . . .

Felmy said worldwide oil demand in 2010 hit a record of more than 87 million barrels a day, driven largely by strong growth in India, China, and the Middle East.

Supply, meanwhile, was constricted by the drilling moratorium in the Gulf of Mexico following the BP disaster, slow production growth in non-OPEC countries, and OPEC production controls. . . .

Over the last year, prices are up 39 cents a gallon or 14 percent. Crude oil is up by a similar percentage, currently trading at just under $90 a barrel.

—Steve Hargreaves

Analysis: Equilibrium prices change whenever market demand or supply curves shift. In this case, both curves are shifting, and the equilibrium price is rising.

11. Use the following data to draw supply and demand curves on the accompanying graph.

Price	$ 8	7	6	5	4	3	2	1
Quantity demanded	2	3	4	5	6	7	8	9
Quantity supplied	10	9	8	7	6	5	4	3

(a) What is the equilibrium price?
(b) If a *minimum* price (price floor) of $6 is set,
    (i) What kind of disequilibrium situation results?
    (ii) How large is it?
(c) If a *maximum* price (price ceiling) of $3 is set,
    (i) What disequilibrium situation results?
    (ii) How large is it?

Illustrate these answers.

PRICE (dollars per period)

QUANTITY (units per period)