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HW#4 From Problem and Applications of Mankiw book, Chapter 4 The Market Forces of Supply and Demand

#1 Answer only part (b) and (e). Follow the instruction of the question and, in addition, describe the market mechanism that causes the change in the market equilibrium.

3. Consider the market for minivans. For each of the events listed here, identify which of the determinants of demand or supply are affected. Also indicate whether demand or supply increases or decreases. Then draw a diagram to show the effect on the price and quantity of minivans.

~~a. People decide to have more children.~~

b. A strike by steelworkers raises steel prices.

~~c. Engineers develop new automated machinery for the production of minivans.~~

~~d. The price of sports utility vehicles rises.~~

e. A stock market crash lowers people's wealth.

#

11. Suppose that the price of basketball tickets at your college is determined by market forces. Currently, the demand and supply schedules are as follows:

Price	Quantity Demanded	Quantity Supplied
\$4	10,000 tickets	8,000 tickets
8	8,000	8,000
12	6,000	8,000
16	4,000	8,000
20	2,000	8,000

a. Draw the demand and supply curves. What is unusual about this supply curve? Why might this be true?

b. What are the equilibrium price and quantity of tickets?

c. Your college plans to increase total enrollment next year by 5,000 students. The additional students will have the following demand schedule:

Price	Quantity Demanded
\$4	4,000 tickets
8	3,000
12	2,000
16	1,000
20	0

Now add the old demand schedule and the demand schedule for the new students to calculate the new demand schedule for the entire college. What will be the new equilibrium price and quantity?

b. A strike by steelworkers raises steel prices.

at P_0 , $Q_s = Q_0 \Rightarrow$ Equilibrium

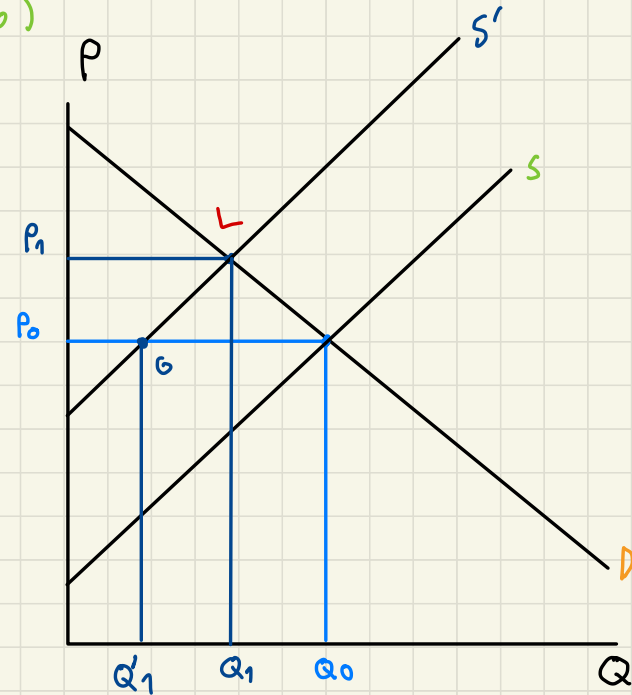
at P_0 and S' , $Q_D > Q'_s \rightarrow$ Excess demand Point G (Q'_1, P_0)

To equilibrium

\hookrightarrow Price \uparrow until P_1 then $Q'_s = Q_0$ Point L (Q_1, P_1)
New equilibrium

$P \uparrow$ Quantity \downarrow

steel price $\uparrow \rightarrow$ supply $\downarrow \rightarrow$ supply curve shift left



e. A stock market crash lowers people's wealth.

People wealth ↓ Demand ↓ Demand curve shift left

at P_0 , $Q_s = Q_0$ Equilibrium

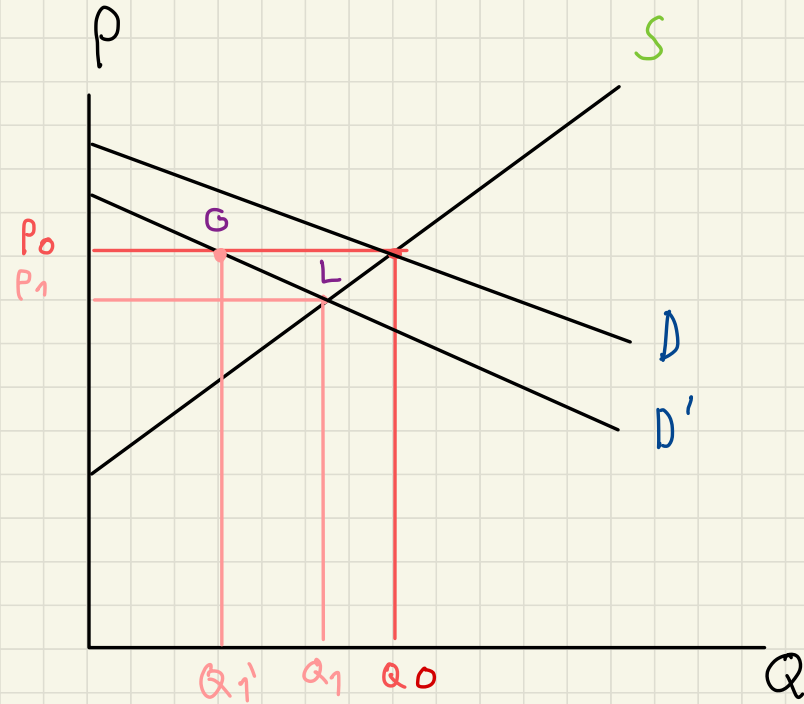
at P_0 and $D \rightarrow D' \rightarrow Q_s > Q_{D'} = \text{Excess supply}$

Point G (Q_1, P_0)

To equilibrium

Price ↓ until P_1 then $Q_s = Q_{D'}$ Point L (Q_1, P_1)

$P \downarrow$ Quantity \downarrow



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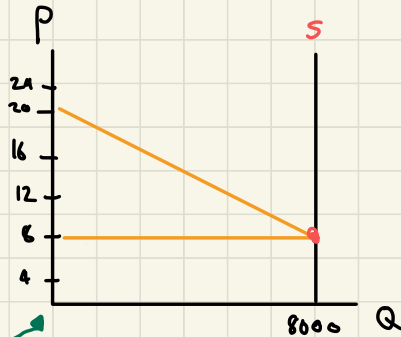
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- What are the equilibrium price and quantity of tickets?
- Your college plans to increase total enrollment next year by 5,000 students. The additional students will have the following demand schedule:

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A



It is unusual because in quantity supplied there have the same amount of tickets which is 8,000. So the reason is because there is 8000 seats and college willing to sell at least \$4

B Supply curve $x = 8000$

$$DC \rightarrow M = \frac{\Delta Y}{\Delta X} = \frac{\Delta P}{\Delta Q}$$

$$\rightarrow \frac{8-4}{8000-10000} = \frac{4}{-2000} = \frac{-1}{500}$$

$$P = \frac{-1}{500}Q + 24$$

Equilibrium

$$P_s = P_d \quad Q_s = 8,000$$

$$P = \frac{-Q}{500} + 24$$

$$P = \frac{-8000}{500} + 24 = 8$$

$$P = 8$$

$$Q = \frac{(P-24)(500)}{-1} = 8000$$

(8,000, 8)

C

New demand curve

$$\frac{-Q}{500} + 24; 24 \geq P \geq 20, 2000 \geq Q \geq 0$$

$$\frac{-Q}{750} + \frac{68}{3}; 20 > P \geq 0, 17,000 \geq Q > 2,000$$

$$0 \leq P < 20$$

$$M = \frac{\Delta P}{\Delta Q} = \frac{8-4}{11000-14000} = \frac{-4}{-3000} = \frac{-1}{750}$$

$$P(x) = \frac{-Q}{750} + b$$

$$b \rightarrow 12 = \frac{-8000}{750} + b$$

$$b = 12 + \frac{8000}{750} = \frac{9000}{750} + \frac{8000}{750} = \frac{68}{3}$$

$$P(x) = \frac{-Q}{750} + \frac{68}{3} \text{ for } 0 \leq P < 20$$

equilibrium

$$P_s = P_D \cdot Q_s = 8,000 \text{ then } P = \frac{-Q}{750} + \frac{68}{3}$$

$$P = \frac{-8000}{750} + \frac{68}{3} = 12$$

equilibrium point (8,000, 12)

↳ (8,000, 12)