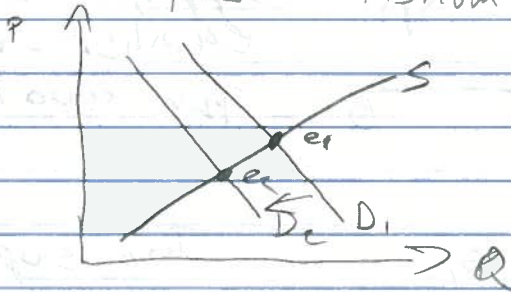


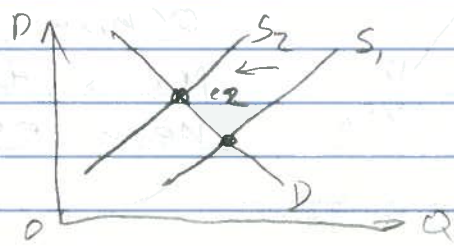
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Dan Portz
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14.01 PS1

1. a. The demand curve shifts to the left: demand decreases due to competition. The equilibrium price falls.

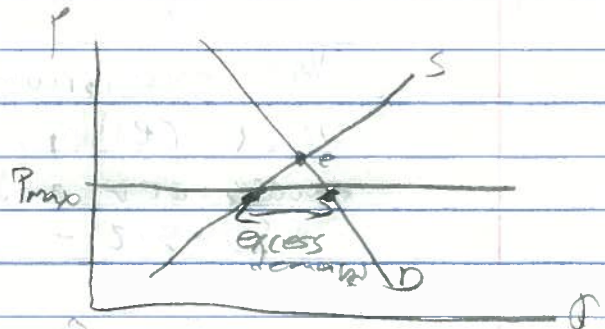
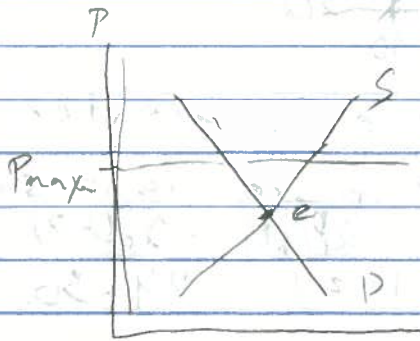


- b. The supply curve shifts to the left: supply decreases at any price.



The equilibrium price rises

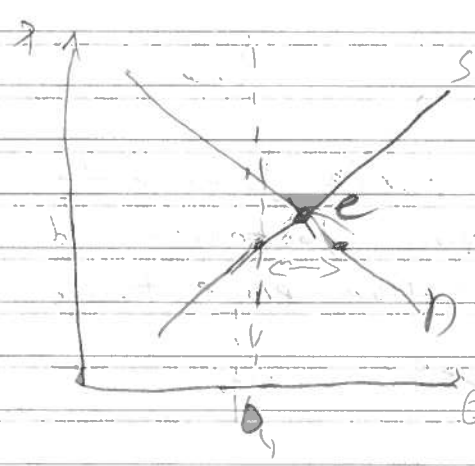
- c. If P_{max} is greater than the equilibrium price, there is no change. Otherwise, the price is capped at P_{max} and there is excess demand.



Q or

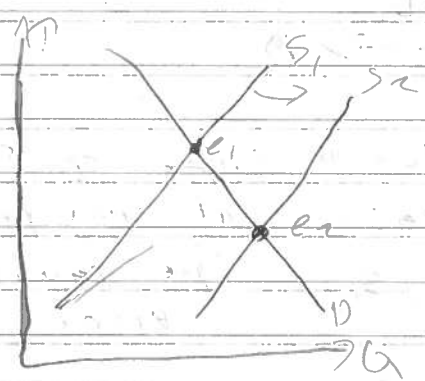
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d.



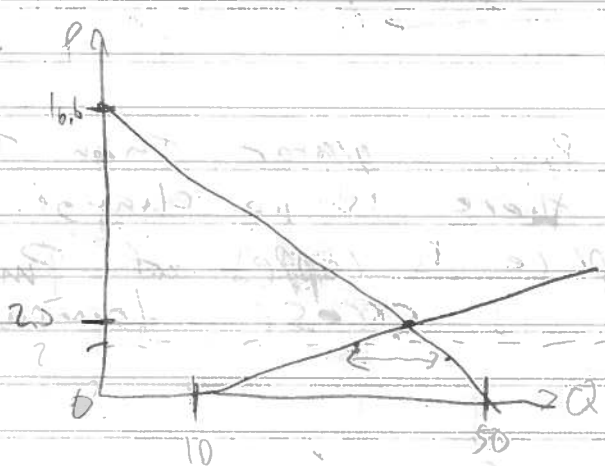
There is excess demand when the quota is in effect because the total supply of corn is raised. Supply increases to the equilibrium level when the quota is lifted.

e.

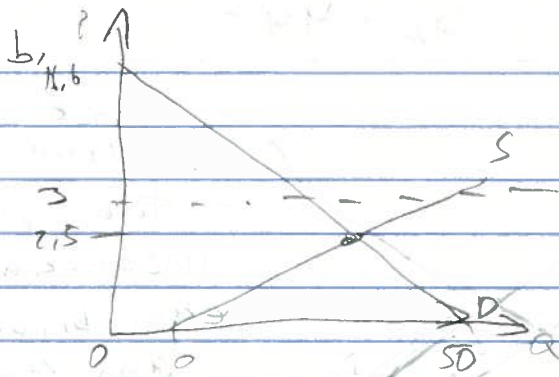


The supply curve shifts to the right as production costs decrease. There is excess supply at the original price, so prices fall to the new equilibrium point.

2.a.

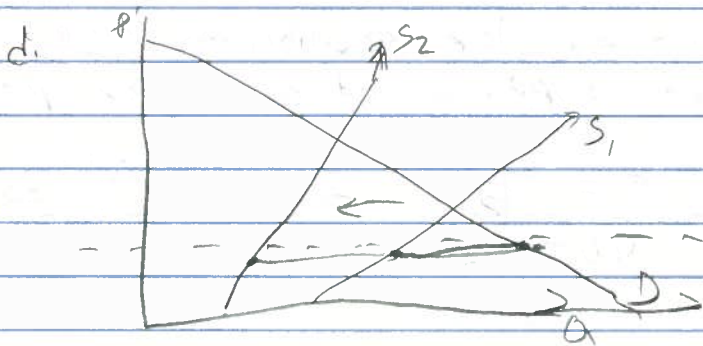


The equilibrium price is greater than the price ceiling, so there is a shortage. The excess demand is $Q_D(10) - Q_S(10)$
 $= 50 - 3.2 = 110 + 13.2 = 44 - 36 = 8 \text{ units.}$



The equilibrium price is below the price ceiling, so there is no shortage.

c. Gasoline could be allocated using a quota. This leads to inefficiency, as some customers will want more gas, and be willing to pay a higher price, than the price controls permit. They may evade the price controls.



The supply curve shifts left as less supply is available at any price. The quantity of the shortage increases because prices cannot rise.

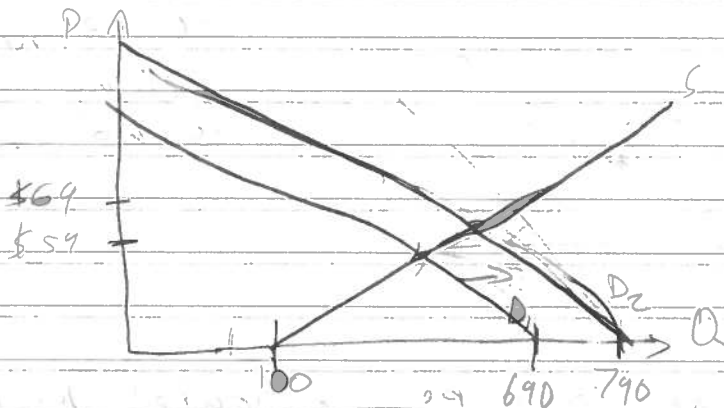
$$3. a. Q_S^S = Q_D^P \Rightarrow 100 + 5P_S = 140 - 5Q + 10P_D$$

$$10P_S = 40 + 10 \cdot 50$$

$$P_S = 540/10 = \boxed{\$5.9}$$

$$Q_S = 100 + 5 \cdot 5.9 = \boxed{39.5}$$

b. $P_N' = \$69, \quad Q_N' = 445$

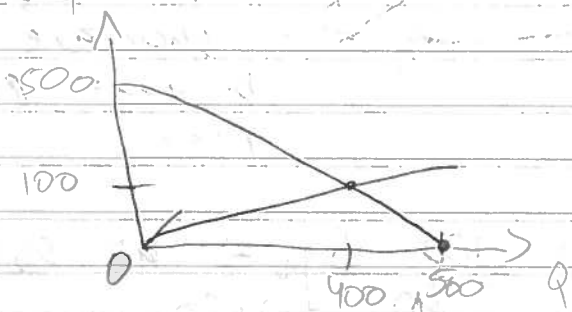


The demand curve shifts to the right, increasing the equilibrium price and quantity.

c. $P_N = 9 + P_R$
 $Q_S = 100 + 5P_N = 100 + 45 + 5P_R = 145 + 5P_R$

As the price at Reeboks increases, the demand for Nikes as an alternative increases. This increases the equilibrium price, so more are supplied at a higher price.

4. a. $500 - P = 4P \Rightarrow P = 100 \Rightarrow Q = 400$



b. The demand becomes fixed at $Q_d = 500$ because the students are no longer paying for the lofts. The price at which 500 lofts will be supplied is \$125. The total cost to MIT is $500 \cdot \$125 = \$62,500$.