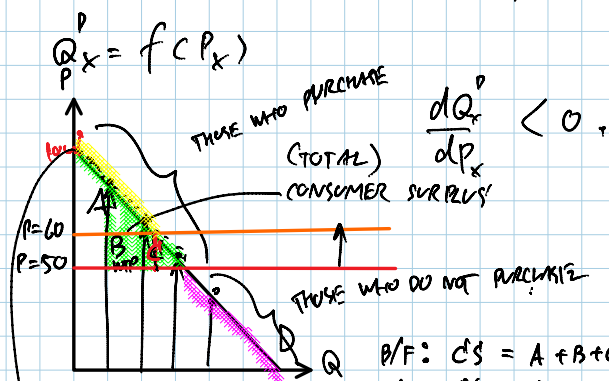


SUPPLY AND DEMAND MODEL

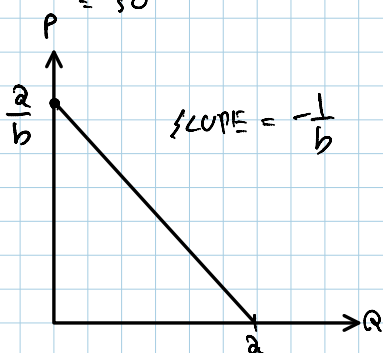
CONSIDER A PERFECTLY COMPETITIVE MARKET.

$Q_x^D = f(P_x, P_y, I, W, E, \dots)$
 WHEN X & Y ARE SUBSTITUTES (+) OR COMPLEMENTS (-)
 INCOME, WEATHER, # OF POPULATIONS,
 EXPECTATION ON INCOME, EXPECTATION ON PRICE



WTP = 100
 $P = 50$
 $CS = WTP - P$
 $= 100 - 50$
 $= 50$

B/F: $CS = A + B + C$
 A/F: $CS = A$
 $\Delta CS = B + C$
 "CONSUMERS ARE WORSE OFF WHEN PRICE RISES!"



DEMAND EQUATION:

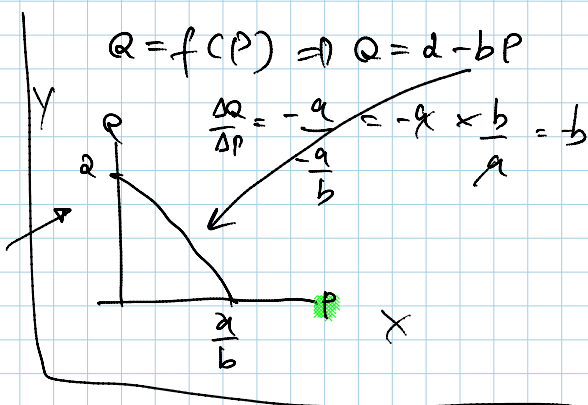
$$Q^D = 2 - \frac{1}{5}P$$

IF $P = 0$, $Q^D = 2$

IF $Q = 0$, $P = \frac{2}{1/5} = 10$

$$\text{SCOPE} = -\frac{2}{\frac{2}{1/5}} = -\frac{1}{5} \times \frac{1}{2} = -\frac{1}{10}$$

$$\frac{\Delta Q}{\Delta P}$$



$$Q = f(P) \Rightarrow Q = a - bP$$

$$\frac{\Delta Q}{\Delta P} = -\frac{a}{b} = -\frac{1}{b} \times \frac{a}{a} = -\frac{1}{b}$$

PRICE ELASTICITY OF DEMAND

= SENSITIVENESS OF Q_x^D IN RESPONSE TO A PRICE CHANGE.

$$E^P = \frac{\% \Delta Q}{\% \Delta P} = \frac{\frac{Q_2 - Q_1}{Q_1} \times 100}{\frac{P_2 - P_1}{P_1} \times 100} = \frac{\Delta Q}{Q} \times \frac{P}{\Delta P} = \frac{\Delta Q \cdot P}{\Delta P \cdot Q}$$

$$E^P = \left(\frac{\Delta Q}{\Delta P} \right) \cdot \left(\frac{P}{Q} \right)$$

$$E^P = -b \cdot \frac{P}{Q}$$

[GIVEN $Q = a - bP$]

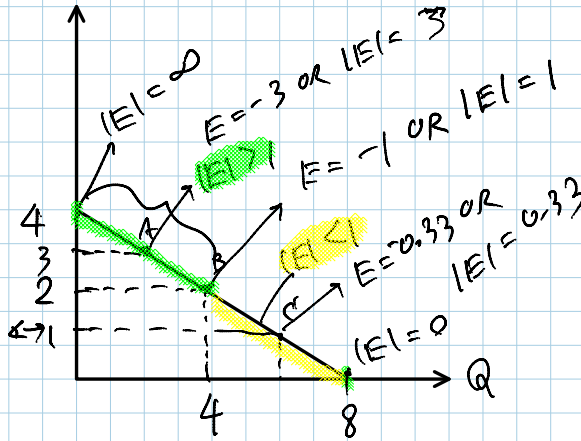
$$\frac{dQ}{dP} = -b$$

Ex: P
 $\uparrow$

$$Q = 8 - 2P$$

$$Q = a - bP$$

Ex: $Q = 8 - 2P$ $\equiv Q = a - bP$



$$E^P = \frac{\Delta Q}{\Delta P} \cdot \frac{P}{Q} \text{ OR } -b \cdot \frac{P}{Q}$$

IF $P = 2$, $E^P = -2 \cdot \frac{2}{4} = -1$

IF $P = 1$, $E^P = -2 \cdot \frac{1}{3} = -\frac{1}{3} = -0.333$

IF $P = 3$, $E^P = -2 \cdot \frac{3}{2} = -3$

IF $P = 0$, $E^P = -2 \cdot \frac{0}{8} = 0$

WHEN $|E| > 1$, DEMAND IS "PRICE ELASTIC"

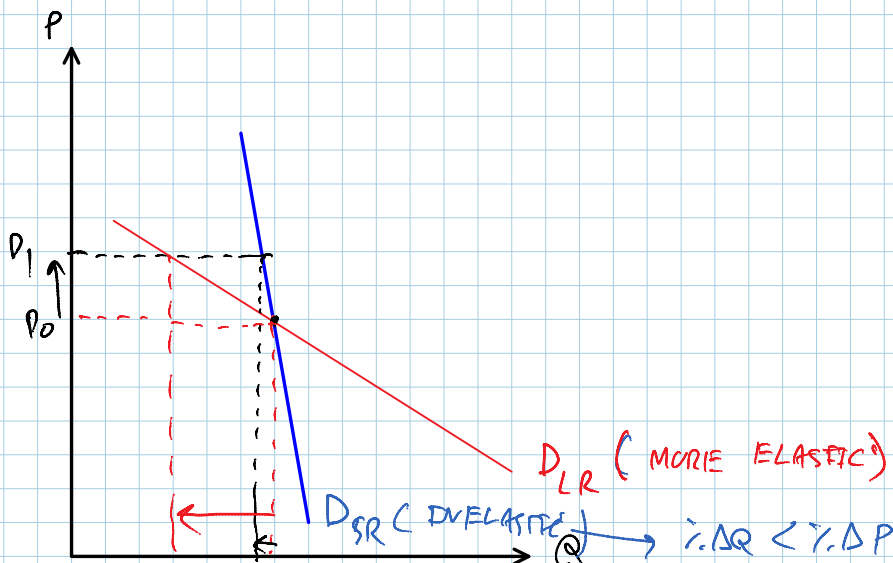
$$|E| = \frac{\% \Delta Q}{\% \Delta P} > 1$$

IT MEANS THAT $\% \Delta Q > \% \Delta P$
(50%) (10%)

$$|E| = \frac{\% \Delta Q}{\% \Delta P} < 1$$

IT MEANS THAT $\% \Delta Q < \% \Delta P$
(1%) (10%)

LONG RUN VS. SHORT RUN PRICE ELASTICITIES



DEMAND FOR GASOLINES

$$\frac{dQ_x^s}{dp_x} > 0 \text{ OR } \frac{\Delta Q_x^s}{\Delta p_x} > 0$$

SUPPLY (BEHAVIOR OF SELLERS)

B/F: $P^S = A$

$P^S = f(P)$

TECHNOLOGY AND REVENUE

