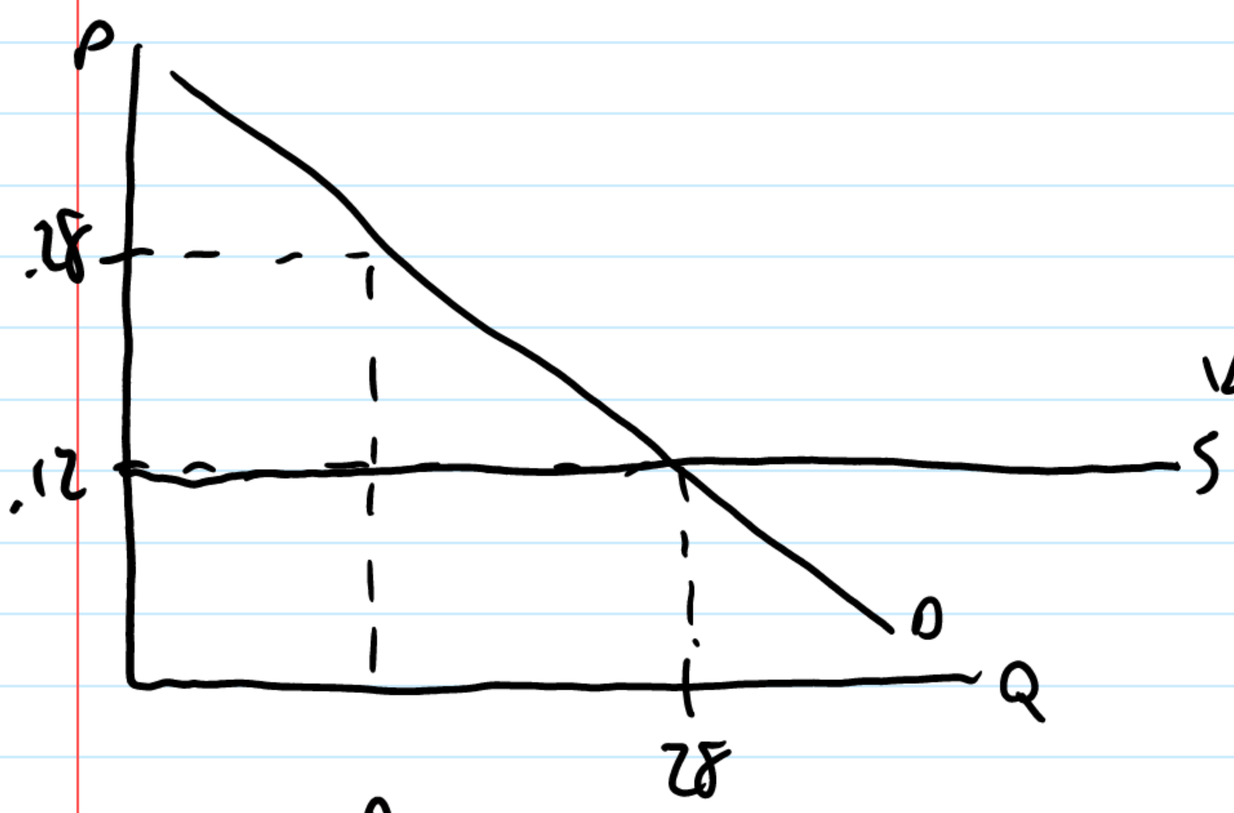
HW 6 BCA of Florida Carbon Emissions Tax

Sunday, September 27, 2020 4:59 PM

worked w/ Nick Lane
Asked Salutter review

$\tau = -.75$ $P_0 = .12$ $MC = .12$ $Q_0 = 28$ $MEC = .05/1$ $MEB = .75$



Flat because electricity utility is a monopoly

$$-.75 = \frac{Q-28}{P-.12} \cdot \frac{.12}{28}$$

$$Q = \frac{Q-28}{P-.17} \cdot \frac{.12}{28}$$

τ^0

$-.75 = (Q-28)/(P-.12) \cdot 3/100$
$-175 = Q-28/P-.12$
$-175P + 21 = Q-28$
$Q = -175P + 49$

τ^1

$Q = (-175P+49)/(P-.17) \cdot 3/100$
Numerator has to be Q
$Q = -175P + 49$
$175P = 49$
$P = .28$

$Q = (-175P + 49 - 28)/(P-.17) \cdot 3/100$
$Q = -175P + 21$
$175P = 21$
$P = .12$

Sorry! We got stuck here :(

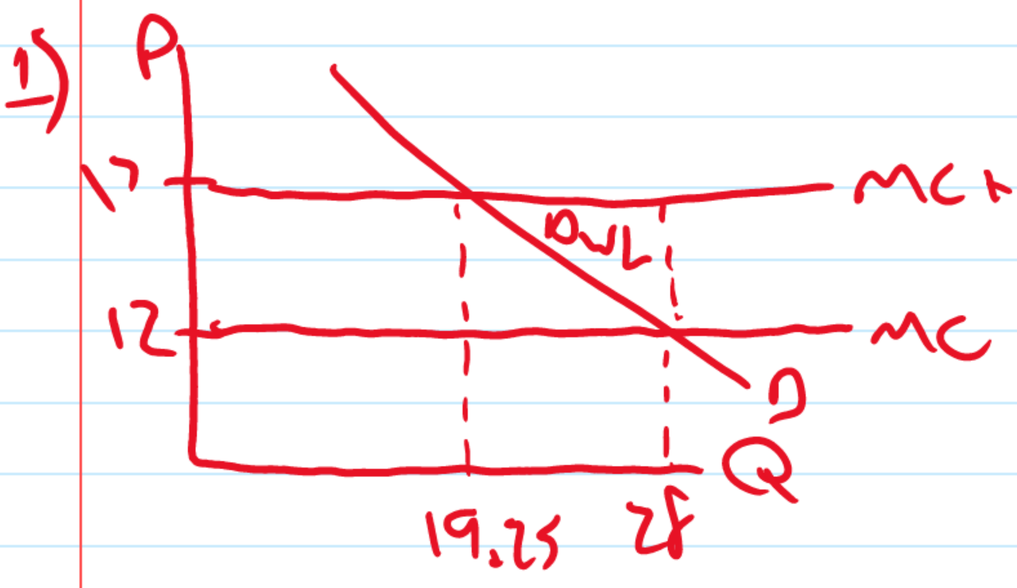
We're going to use P and Q instead of real numbers

2) Cost = 21,500,000 P
benefit to ~~tax~~ Buyers = .05Q
decreased emissions $= (Q - Q_0) \cdot 21,500,000$

3) $\frac{(Q-Q_0) \cdot 21500000}{76000000000} = 43(Q-Q_0)/15200$

4) Emissions could be effectively regulated in cities and other areas with high smog such as LA or cities in India and China. This is because smog is usually very local to the city and has a large negative impact.

5)



$\Delta CS = -.05 \cdot 19.25 - .05 \cdot \frac{8.75}{2} = -1.18$
$\Delta PS = 0$
$\Delta GS = .05 \cdot 19.25 = .9625$
$\Delta SS = -1.18 + 1.25 \cdot .9625 = .021875$

6) $\frac{1.18 \text{ person}}{\text{day}} \cdot \frac{365 \text{ day}}{\text{year}} \cdot 21.5\text{m people} = 9.44\text{B/year gain}$

$\frac{.9625 \text{ person}}{\text{day}} \cdot \frac{365 \text{ day}}{\text{year}} \cdot 21.5\text{m people} \cdot 1.25 = 9.27\text{B/year cost}$

$\frac{7.75 \text{ kwh}}{\text{person day}} \cdot 21.5\text{m people} \cdot \frac{365 \text{ day}}{\text{year}} \cdot \frac{.05}{\text{kwh}} = 3.43\text{B/year benefit}$

floridian benefits = 21.5m/7.6B = .283% or 9.7m/year