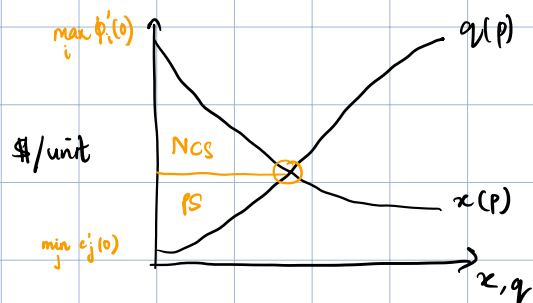


January 23, II

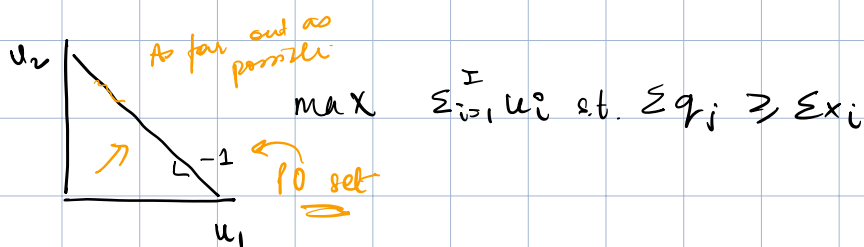
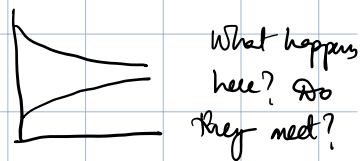
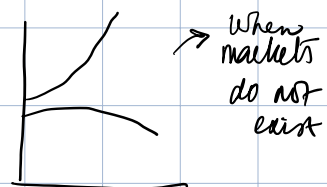
FFWE (FWT) If  $p^*$  & the associated allocation  $(x_1^*, \dots, x_n^*)$  and  $(q_1^*, \dots, q_n^*)$  constitute a CE, it is *pareto optimal*.



(Marshallian surplus is as large as possible).

AS can be flat too. It just does not have to be downward sloping.

\* The utility from numeraire is same for everyone,  $\phi$  can differ. Thus the slope below is  $-1$ .



$$L = \sum_i \phi_i(x_i) - \sum_j c_j(q_j) + M - \lambda(\sum x_i - \sum q_j) + \sum \mu_i x_i + \sum \mu_j q_j$$

because this needs to sum in aggregate.

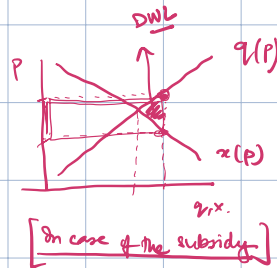
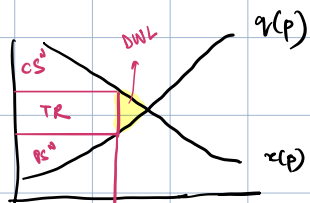
individually applicable

$$\begin{aligned}\phi'_i(x_i) - \lambda + \mu_i &= 0 ; I \\ -c'_j(q_j) + \lambda + \mu_j &= 0 ; J \\ \Rightarrow \text{Same as CE}\end{aligned}$$

④ SWT :

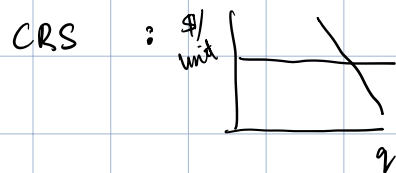
# Taxes

$$p^d = p^s + t$$

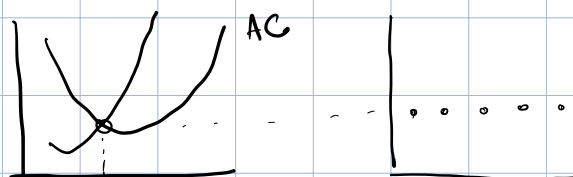
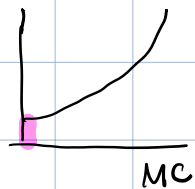


Supply Curves:-

IRS :  $c' < 0$



DRS :



Next class:-

Land rent, Nelson Economics,  
Natural Resources,  
Externalities