next exam would not cover all the chapter 6

Ex: $u(x,y) = 2\sqrt{x} + y$ $I = 10$, $P_y = 1$, $P_x^1 = 0.5$, $P_x^2 = 0.2$.

Recall: interor solution: $(x_{init}, y_{init}) = (4, 8)$

$(x_{fin}, y_{fin}) = (25, 5)$

$(x_{dec}, y_{dec}) = (25, 2)$

↑ decomposition

CS difference between income needed to buy initial to buy initial bundle and income need to buy decomposition bundle at new prices

$I_{dec} = 0.2 \times 25 + 1 \times 2 = 7 \Rightarrow CS = 10 - 7 = 3$

Calculate optimal bundle that gives same utility as (x_{fin}, y_{fin}) when prices are old

- $u(x_{fin}, y_{fin}) = 2\sqrt{25} + 5 = 15$.
- need $MRS_{xy}(x,y) = P'x$

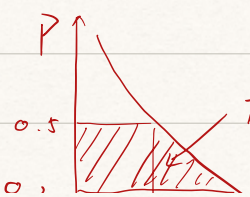
$$\Rightarrow \begin{cases} 2\sqrt{x} + y = 15 \\ \frac{1}{\sqrt{x}} = 0.5 \end{cases} \Rightarrow \begin{cases} x = 4 \\ y = 11 \end{cases} \Rightarrow (x_{EV}, y_{EV}) = (4, 11)$$

EV: difference between income needed for final bundle and income needed for EV bundle:

$I_{EV} = 0.5 \times 4 + 1 \times 11 = 13$

$EV = 13 - 10 = 3$.

consumer surplus: demand for x is $x = \frac{1}{(P_x)^2}$



market demand: for any given price, add individual demand,

warning: keep track of when individual demand hits zero.

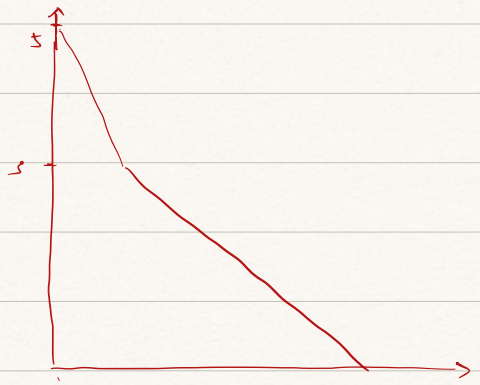
Ex: $q_1 = 6 - 2p$ at $p=4$, $q=-2$, at $p=4$, $q_1 + q_2 = 1$.

$q_1 + q_2 = 21 - 5p$ if $p \leq 3$

$= 0$ if $p \geq 3$.

$q_2 = 15 - 3p$ if $p \leq 5$

$= 0$ if $p \geq 5$



$p > 5$: $Q = 0$

$p \in (3, 5]$: $= 15 - 3p$

$p \leq 3$. $= 21 - 5p$

labour - leasure choice:

- one good: the composite good:
- leasure: amount of time L not spent at work.
- wage payment payment per hour of work

income $= (24 - L)w$