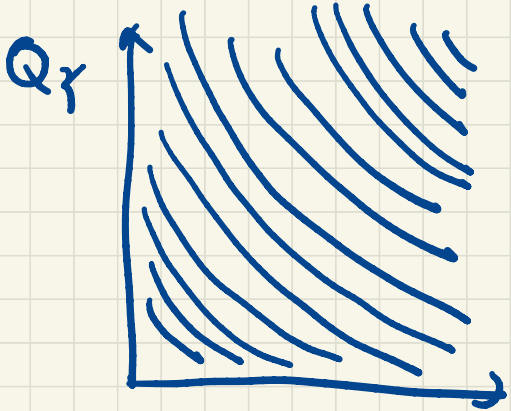
Lecture 5: In-class Problems

AFTERNOON

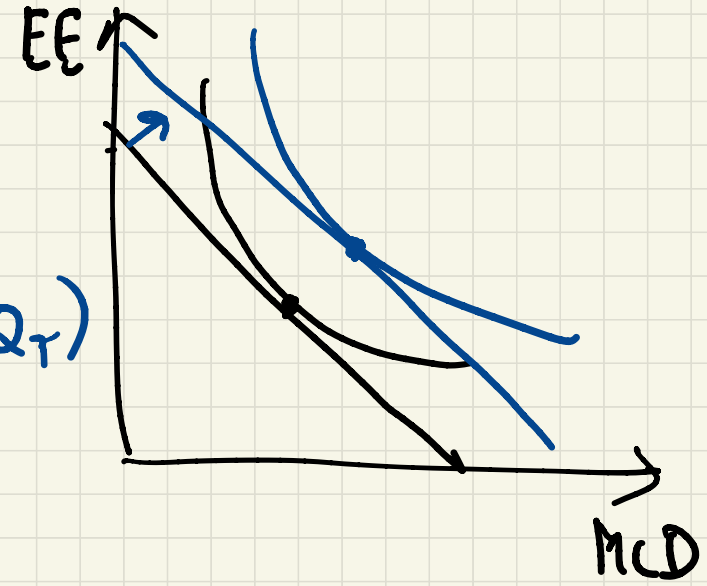
9/29/20

Q1 (a) Suppose that the US passes a universal basic income policy, which increases income for low-income individuals. Using the logic of budget constraints and utility maximization, explain what you predict should happen to demand for McDonald's. Explain whether this prediction comes from changes in the utility function or changes in the budget constraint.

- depends on whether McD is a normal or inferior good,
- function of budget constraint



Sarah's $U(Q_X, Q_T)$



Q1 (b) Suppose that tariffs on Chinese goods hit some consumer goods (call these goods X) and not on other consumer goods (call these goods Y). Use our utility maximization framework to predict what happens to consumption of X and Y if the two goods are complements, and if they are substitutes.

complements: consump of both goods will decrease.

cross-price elasticity of demand

$$E_D^{XY} = \frac{\%\Delta Q_Y}{\%\Delta P_X}$$ for complements $E_D^{XY} < 0$

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substitutes: consumption of Y will increase

$$E_D^{XY} = \frac{\%\Delta Q_Y}{\%\Delta P_X}$$ for substitutes $E_D^{XY} > 0$

Q2. Bob, Carol & Ted. Each w/ income of $30

Prices: peaches $3, apples $2.

(a) Suppose the price of peaches falls to $2.

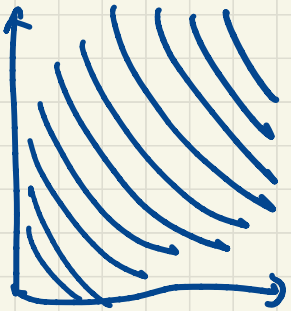
Draw a new budget line for each consumer

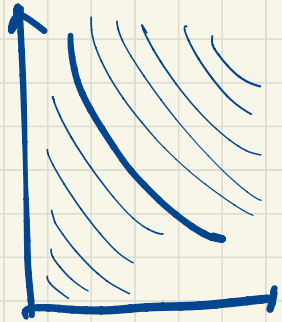
Find new optimal qty

(b) Find substitution effect

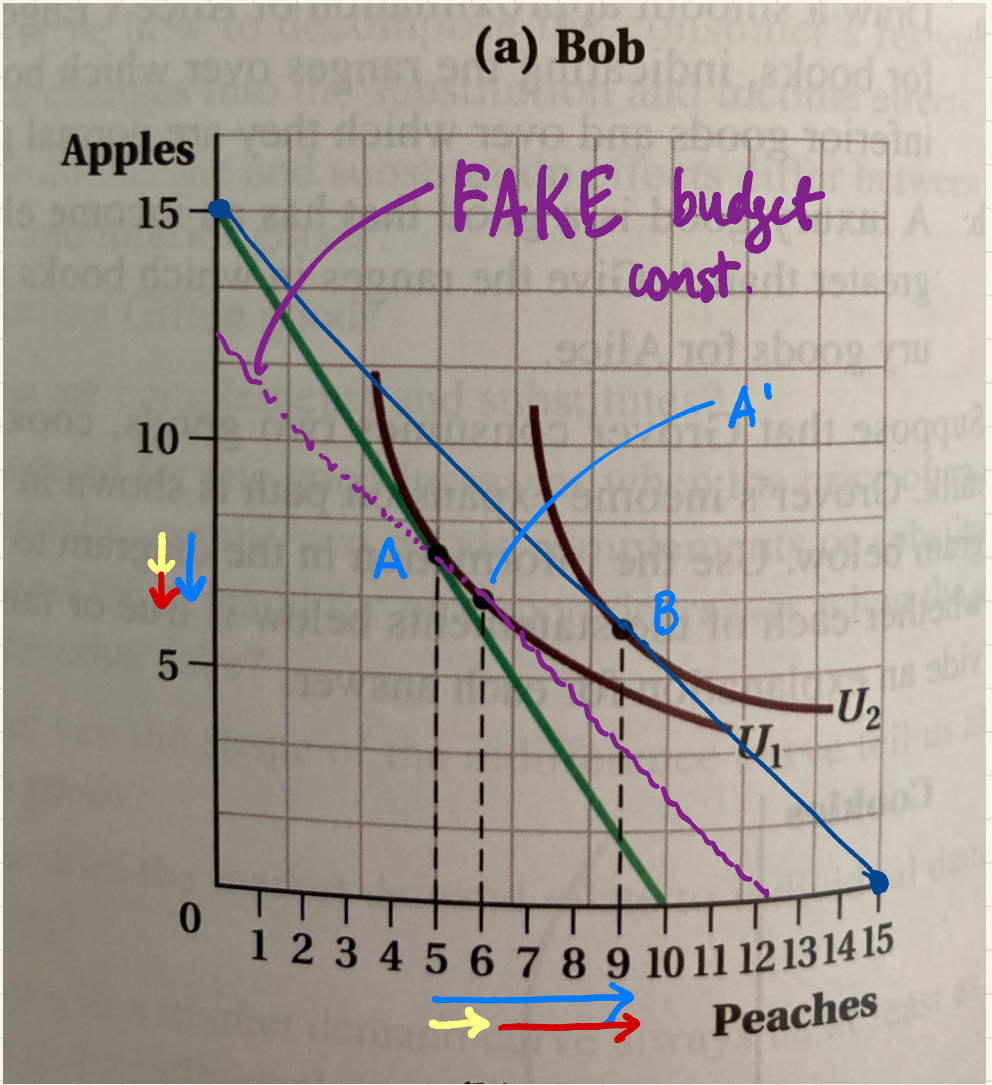
(c) Find income effect

(d) Are peaches normal, inferior or income inelastic for each consumer?





$U(X,Y) = X^{.6} Y^{.4}$



total effect

substit. effect

income effect

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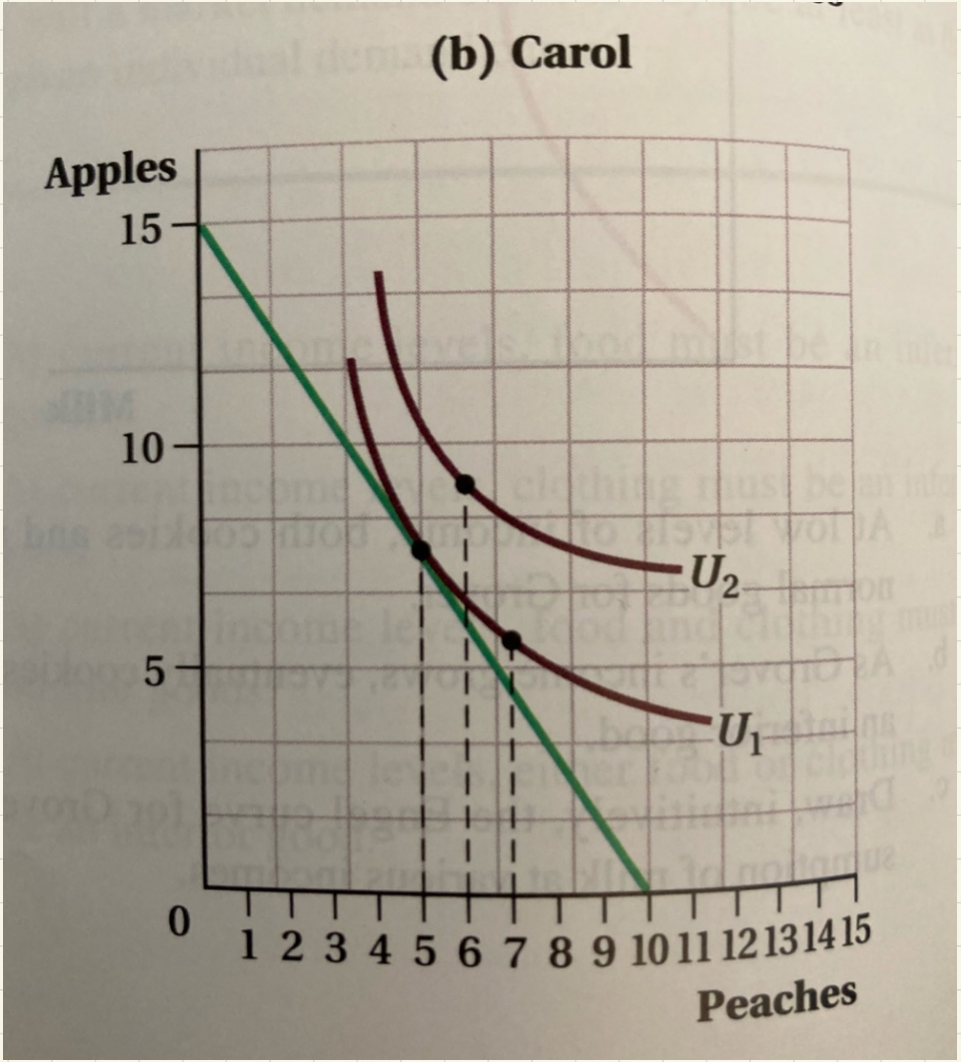
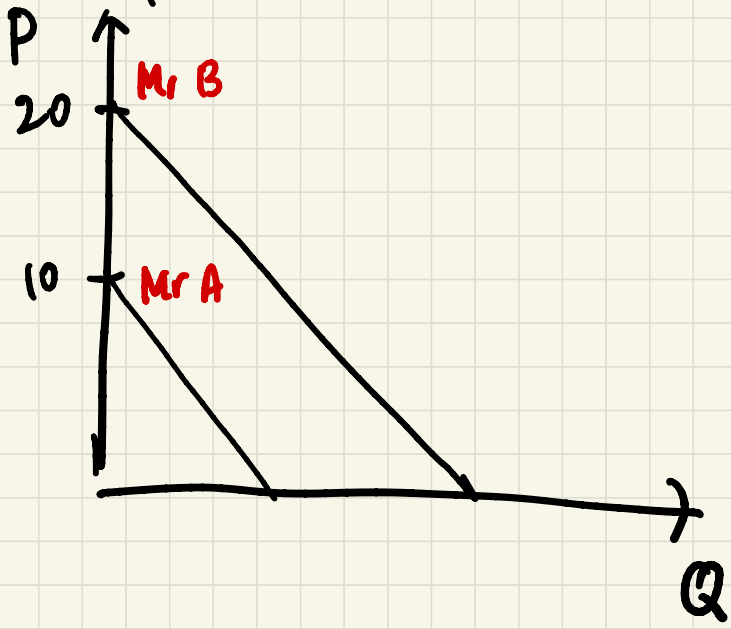
total effect

= income ef

+ substit. ef.


(b) Carol
Apples
15
10
5
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Peaches
U_2
U_1

Poll question 3.



Find both Y intercepts.

when $Q = 0$.

Mr. A. $Q = 10 - P$

$\Rightarrow 0 = 10 - P$

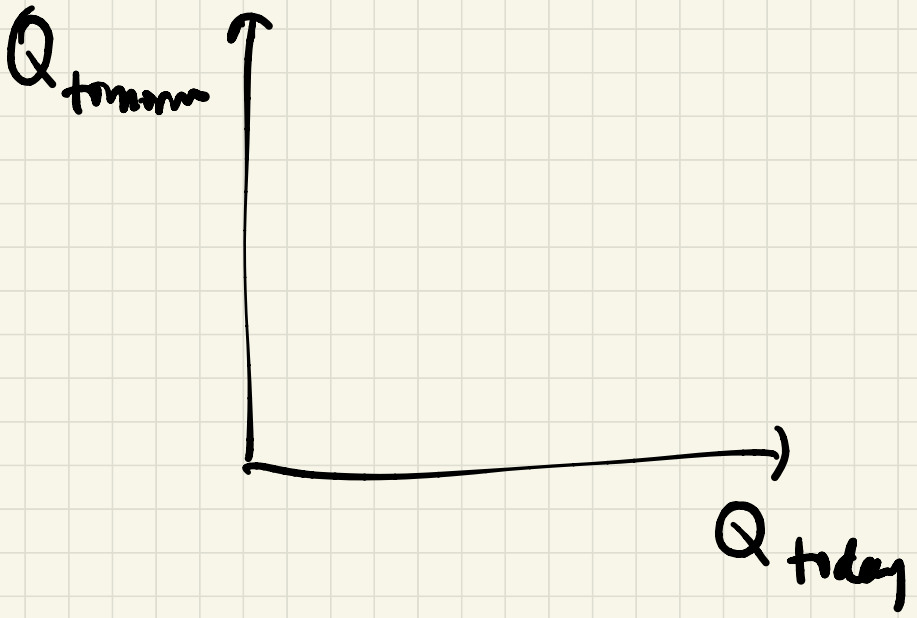
$\Rightarrow P = 10$

Mr. B $Q = 20 - P$

$0 = 20 - P$

$20 = P$

Curves do not overlap


$Q_{tomorrow}$
Q_{today}