Lecture 8(iii)

Announcements

Start working on “Consumer Theory” worksheet (at week 9 on Canvas)

9:05 lecture: Volunteer note taker?

London/Brexit Summer Program

Lecture

Continuing Consumer Theory from Lec 8(ii)

1. Quick review of Hawkeye (perfect substitutes)

2. Bucky: perfect complements

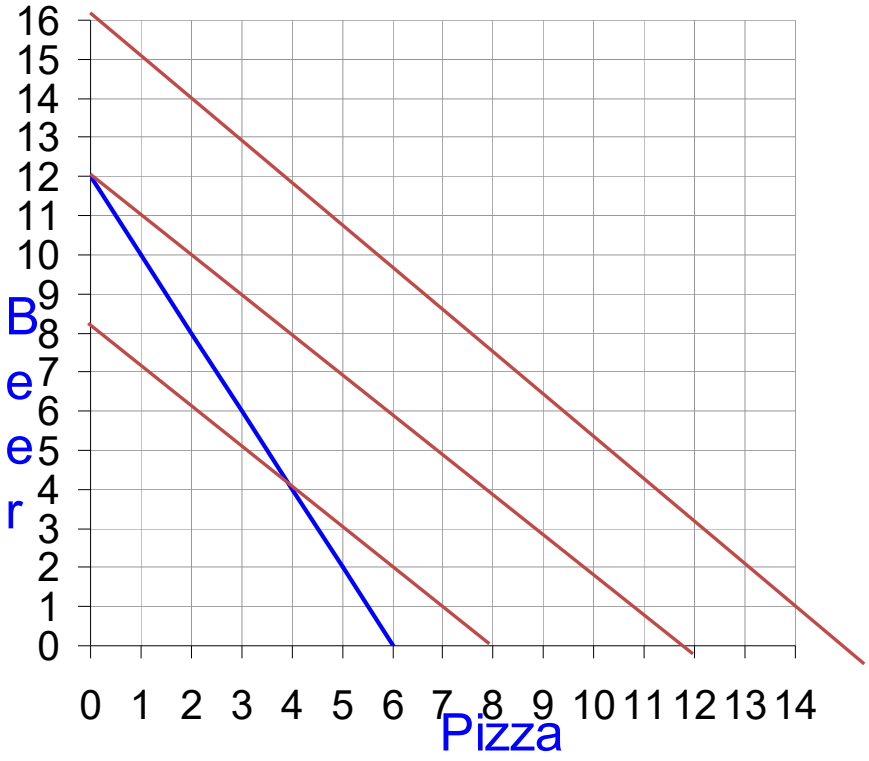
3. What about Scarlet Knight?

4. Goldy!

5. Change in income.

6. Impact on demand from change in price. (Income and Substitution Effects)

Case 1: Hawkeye (Perfect Substitutes)



Case 2: Bucky Badger Fixed Proportions

Very particular:

A meal: one beer and one pizza

Utility equals number of meals.

Suppose Bucky has I = 24 just like before and P_{pizza} = \$4 and P_{beer} =\$2

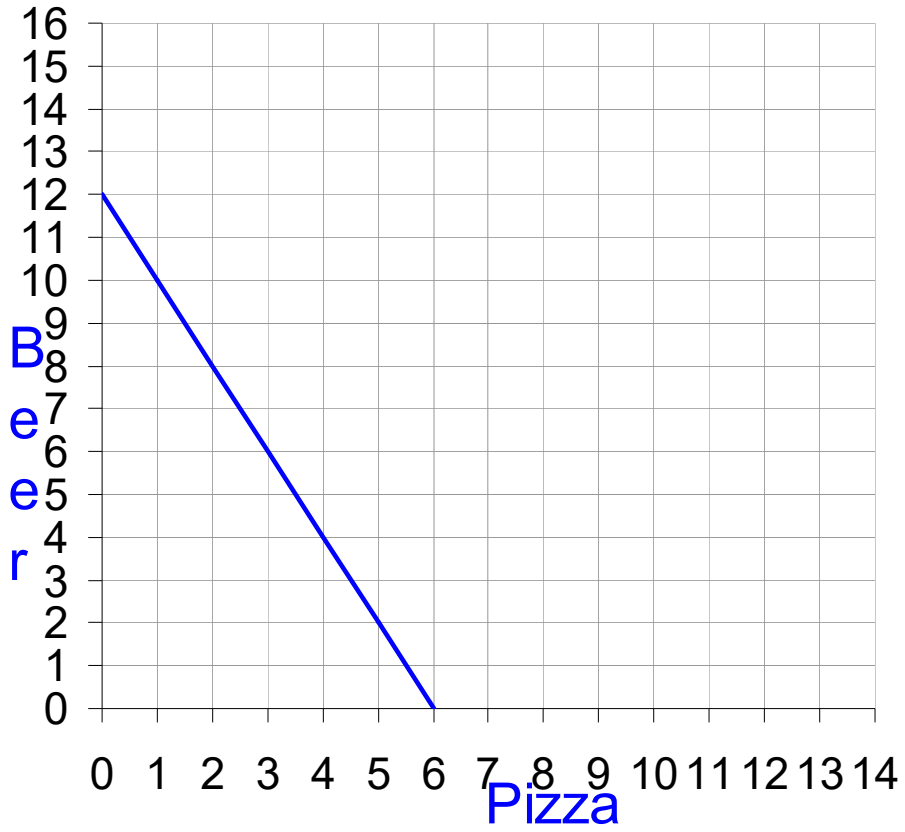
What is optimal consumption bundle?

How much for a meal?

How many meals can he buy?

So $Q_{pizza} = 4$ and $Q_{beer} = 4$ in optimal consumption bundle.

Picture?

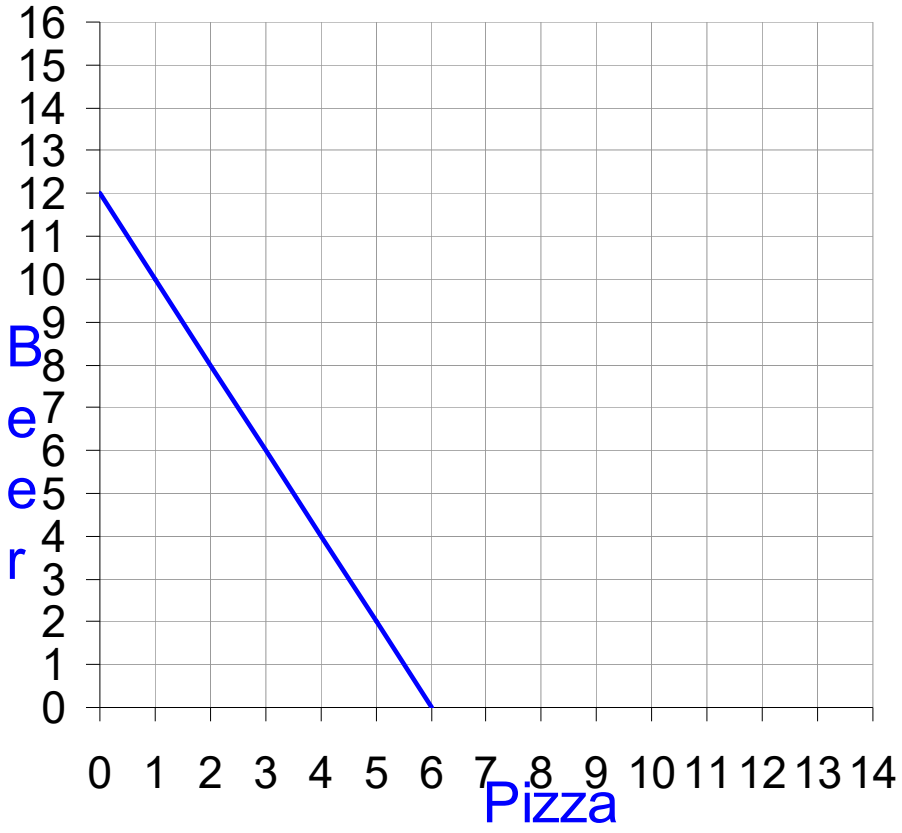


Test Your Knowledge
Meet Rutgers Scarlet Knight

From New York city area and only cares about pizza

What do his indifference curves look like? Same budget

- Income: I = $24
- Price of pizza: P_{pizza} = $4 slice
- Price of beer: P_{beer} = $2 bottle



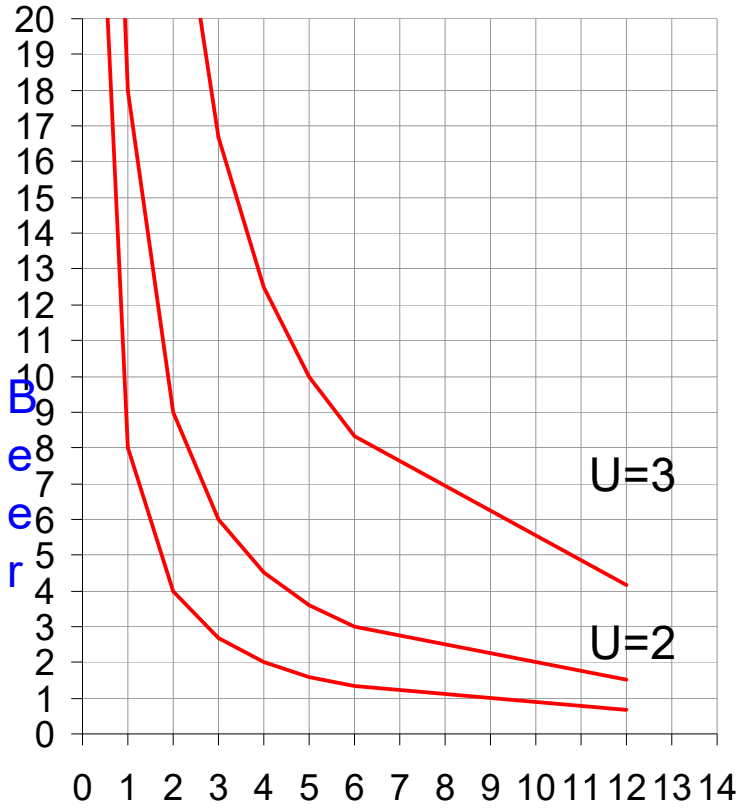
Case 3: Goldy Gopher

In between extreme cases

Diminishing marginal rate of substitution.

Meaning, as he eat more pizza, his willingness to give up beer to get even more pizza goes down.

Means indifference curves have a bowed shaped.



Suppose

P_{Beer} = \$2, P_{Pizza} = \$4, I = \$24

At optimum two conditions:

(1) On budget constraint and

(2)

$$MRS = \frac{P_{pizza}}{P_{beer}}$$

Marginal benefit of pizza (in beer)

=

Marginal cost of pizza (in beer)

What are we doing here?
Constructing Demand Curves

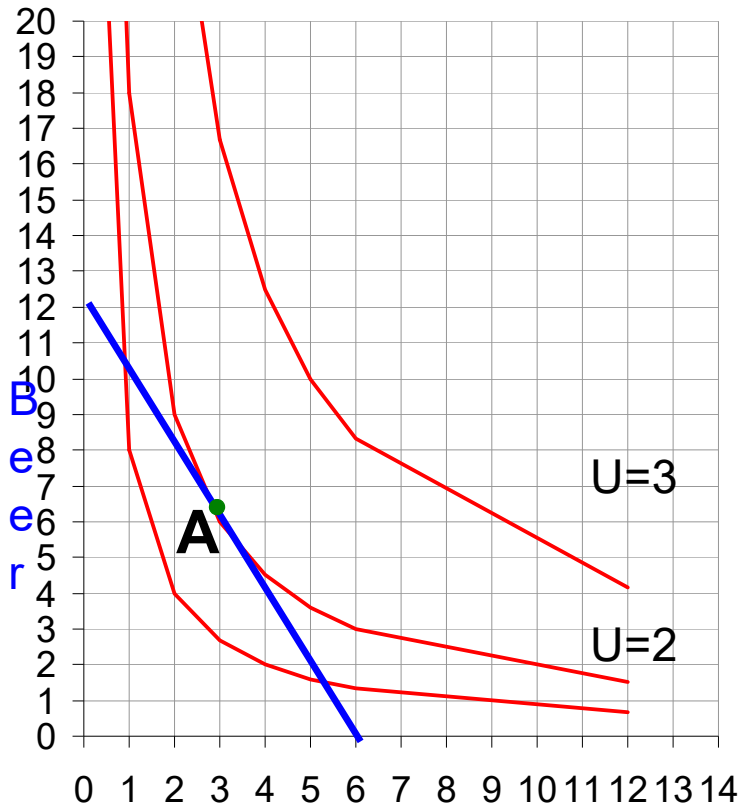
Demand for pizza depends upon?

- Own price (here $4)
- price of other stuff (here price of beer= $2)
- Income (here $24)
- Preferences (Here Goldy)

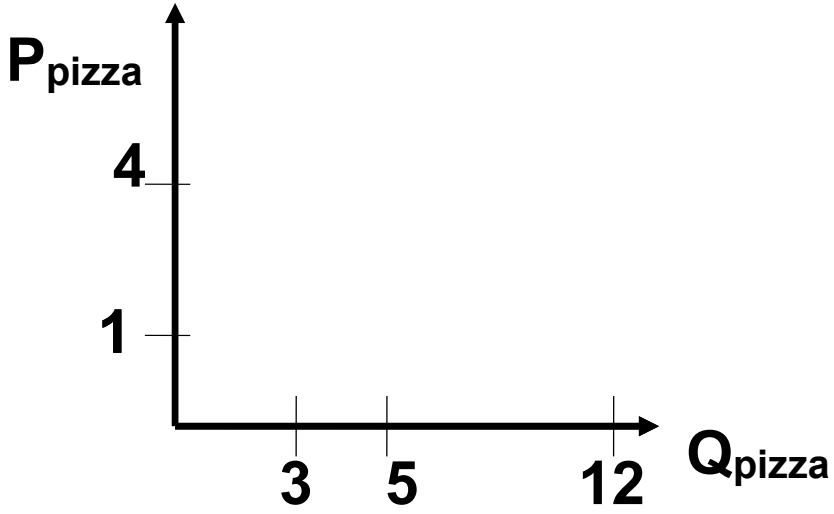
Put this together, get point A
Quantity demanded = 3 Pizza
(and 6 beers)

Point where:
(1) On budget constraint and

(2) $MRS = P_{pizza}/P_{beer}$



We use the new graph to determine our old graph
(Demand Curve from the beginning of the semester)



Lower price to $1, move along demand

Change income, shift demand
At Income = $40: Pick optimal consumption bundle and label it **B**

At Income = $40, Goldy consumes:

____ Pizza

____ Beer

Pizza and beer

are _____ goods

But what would an inferior good look like on new graph?

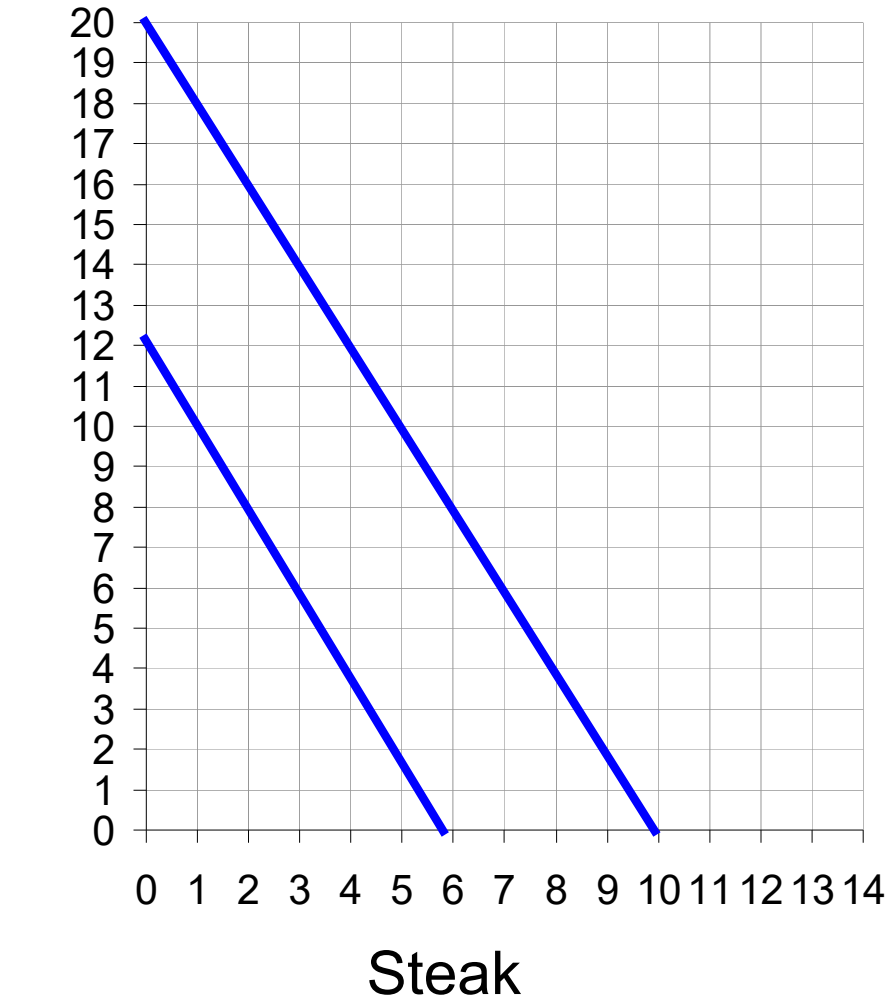
Forget Beer and Pizza for now and let's suppose Spam and Steak are the only goods

P

$_{spam}$ = $2, P_{steak} = $4

I = $24 initially

I = $40, new income



Effect of Price Change

Complicated because two things going on:
(1) opportunity cost going down
(2) plus something like getting more income.

Remember at
$I = \$24$, $P_{beer} = \$2$, $P_{pizza} = \$4$

the optimal consumption bundle is
$Q_{beer} = 6$, $Q_{pizza} = 3$.

Suppose P_{pizza} falls to \$1.

If stick with same consumption bundle than have 3*\$3=\$9 extra in wallet.

To understand how individuals react to a price change, economists break it down to two pieces:

1. Substitution effect. Effect of change in opportunity cost (by spending power held fixed so stay on same indifference curve)

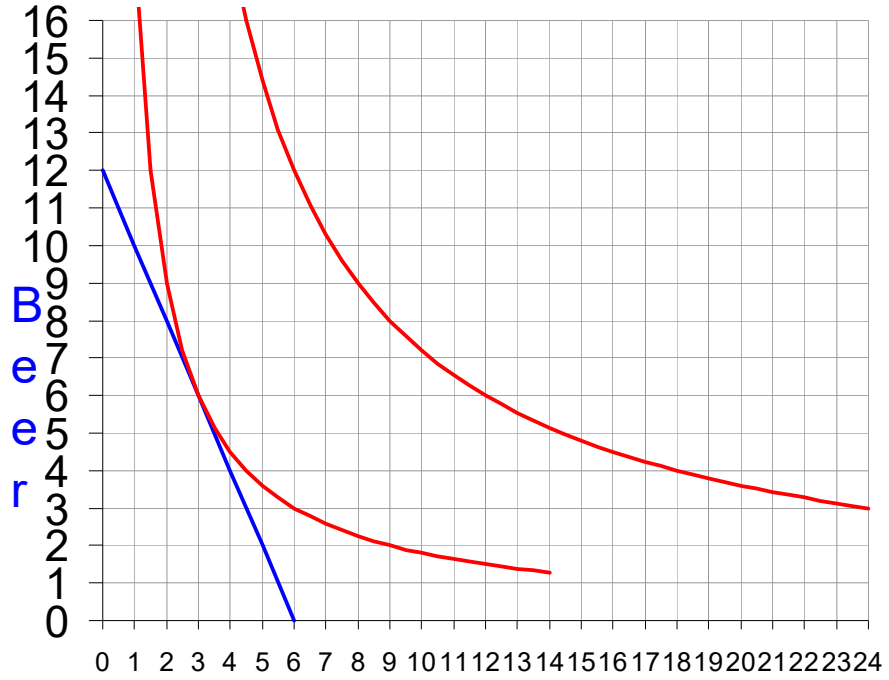
2. Income effect
The effect of change in income holding opportunity cost fixed at the new level.

But let's start with the **total effect**. That should be easy

I = \$24 and P_{Beer}=\$2 fixed

P_{Pizza} = \$4: Label OCB **A**

P_{Pizza} = \$1: Label OCB **C**



(OCB is Optimal Consumption Bundle)

Movement **A** to **C** is total effect of price decrease

Breakdown to substitution effect: New opportunity cost, but original indifference curve.

Label this **S**

Substitution Effect is movement from **A** to **S**

Income Effect is movement from **S** to **C**

When price falls:

Substitution effect:
buy more (because opportunity cost is lower)

Income effect (since original bundle is cheaper than before so have income left over)
normal good: buy more
inferior good: buy less

So if normal, Sub and Inc work same way

If inferior, Sub and Inc go different ways.

Most important application of this theory: Labor supply

For consumer goods, price goes up, result in a **decrease** in income. So for normal goods, Sub and Inc go the same way.

For labor, price goes up, individual gets an **increase** in income.

Income Effect

- Leisure a normal good
- So income effect: work less
- Evidence that leisure a normal good: What do lottery winners do? Quit working?

Leisure: a good. Has an opportunity cost: wage.

Wage goes up:

Substitution effect

- Opportunity cost of leisure increases
- consume less leisure or…… work more

What is net effect?

Over time, as income has increased time spent working has gone down (but income has increased dramatically)

So for trend over time, income effect has predominated