To max total utility

- reach the highest
indifference curve
affordable

- pick x and y such
that the budget line
is tangent to the
indifference curve
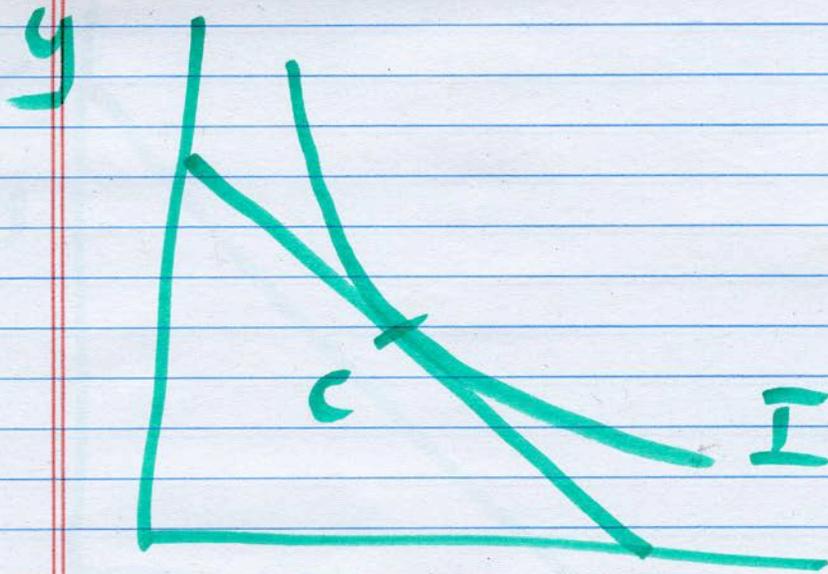
at c, slope of
budget line =
slope of indiff curve

slope of Indiff curve
$= -MU_x/MU_y$
slope of budget line ?

y

$\frac{Y}{P_y}$

$\frac{Y}{P_x}$

x
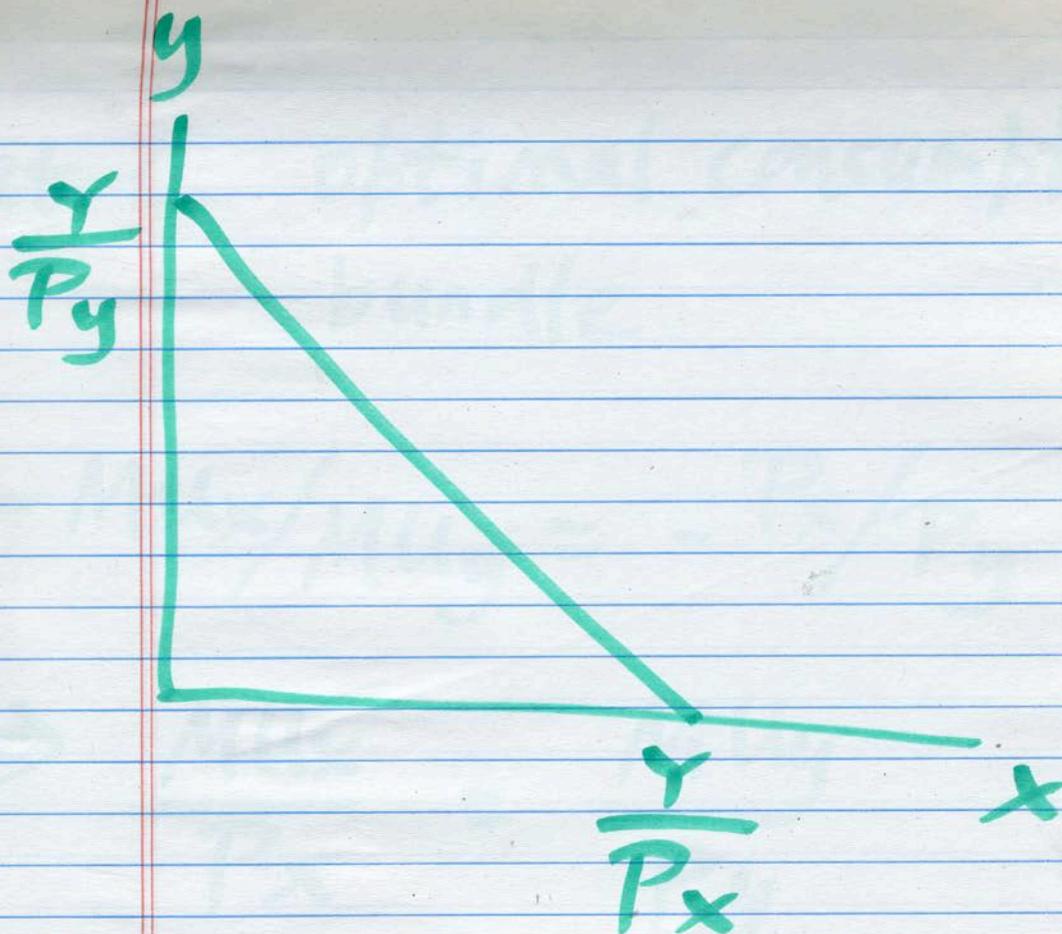
slope $= -(Y/P_y)/(Y/P_x)$

$= -P_x/P_y$

at c optimal consumption bundle

$$-MU_x/MU_y = -P_x/P_y$$

$$\Rightarrow \frac{MU_x}{P_x} = \frac{MU_y}{P_y}$$

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$$

y

c

I

x
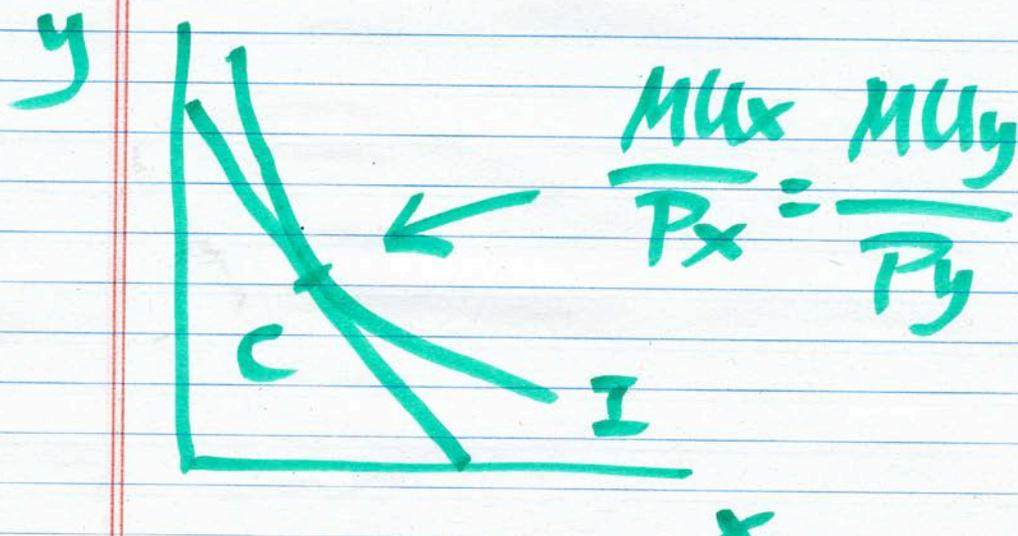
Same condition as
before, now _no_
need to assume
that utils are
measurable

Budget line (again)

$$P_x \uparrow \quad P_y \text{ same}$$
$$I \text{ same}$$
income

rotate

$$-\left(\frac{I}{P_y}\right) / \left(\frac{I}{P_x}\right) = -\frac{P_x}{P_y}$$

y axis: $\frac{I}{P_y}$

x axis: I/P_{x_2}, I/P_{x_1}
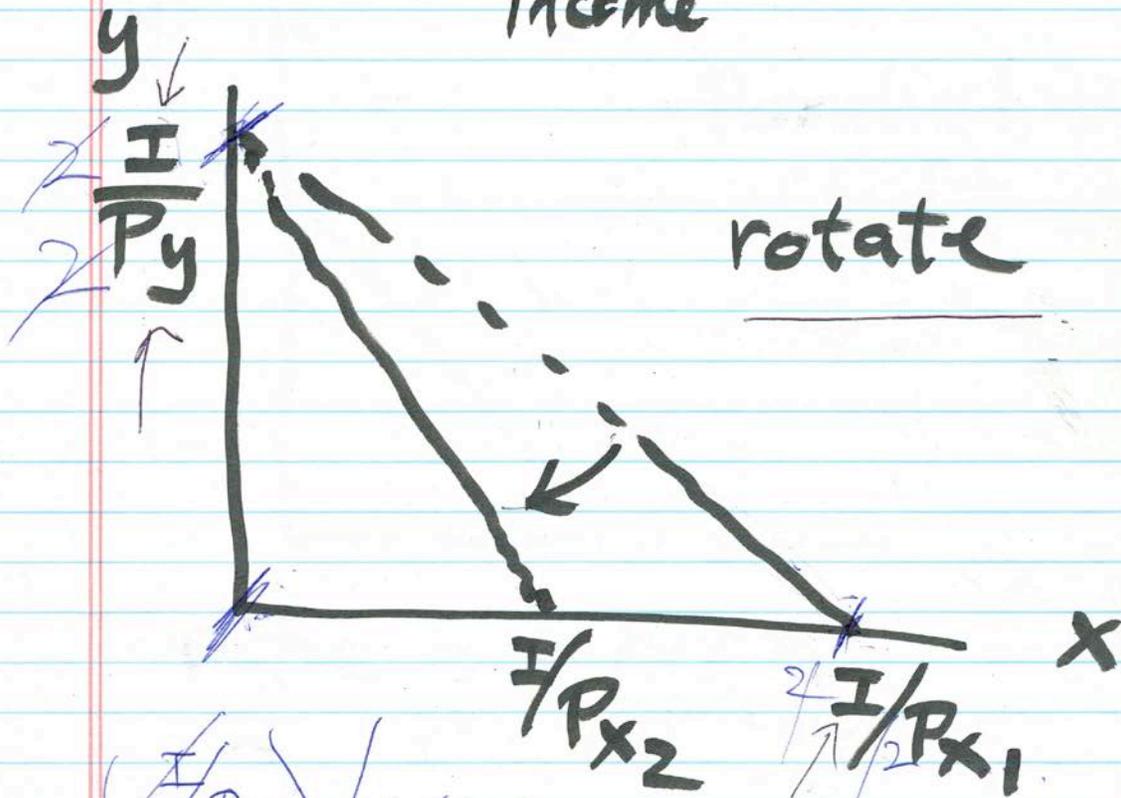
P_x same

P_y same

I income ↑

Parallel
shift
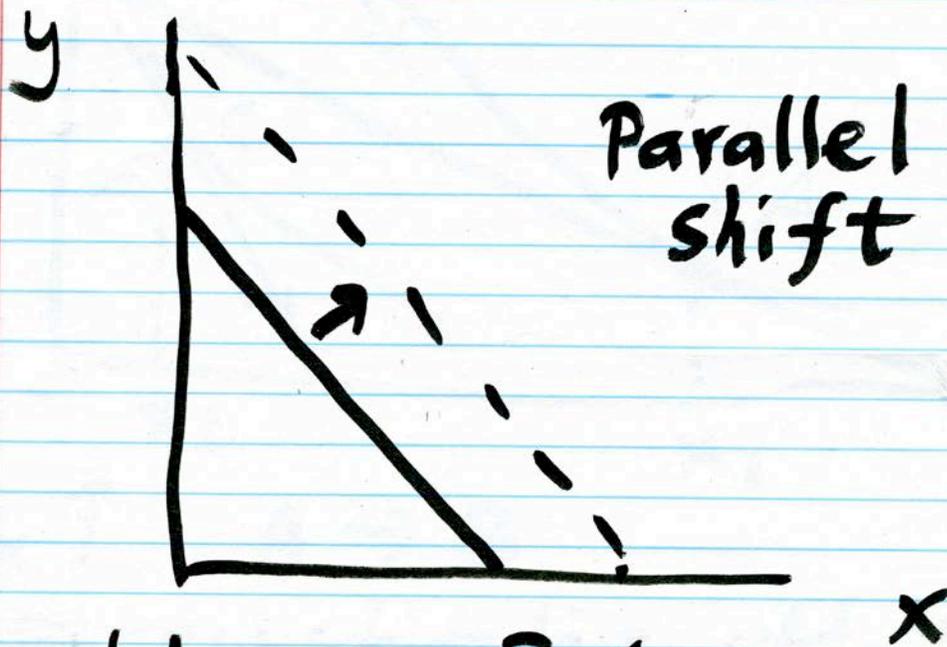
slope = $-P_x / P_y$

$P_{x_1} \rightarrow P_{x_2} \uparrow$

$x_1 \rightarrow x_2 \downarrow$

y

B

C

A

x_2

x_1

x

$P_x \uparrow$

$A \rightarrow B$
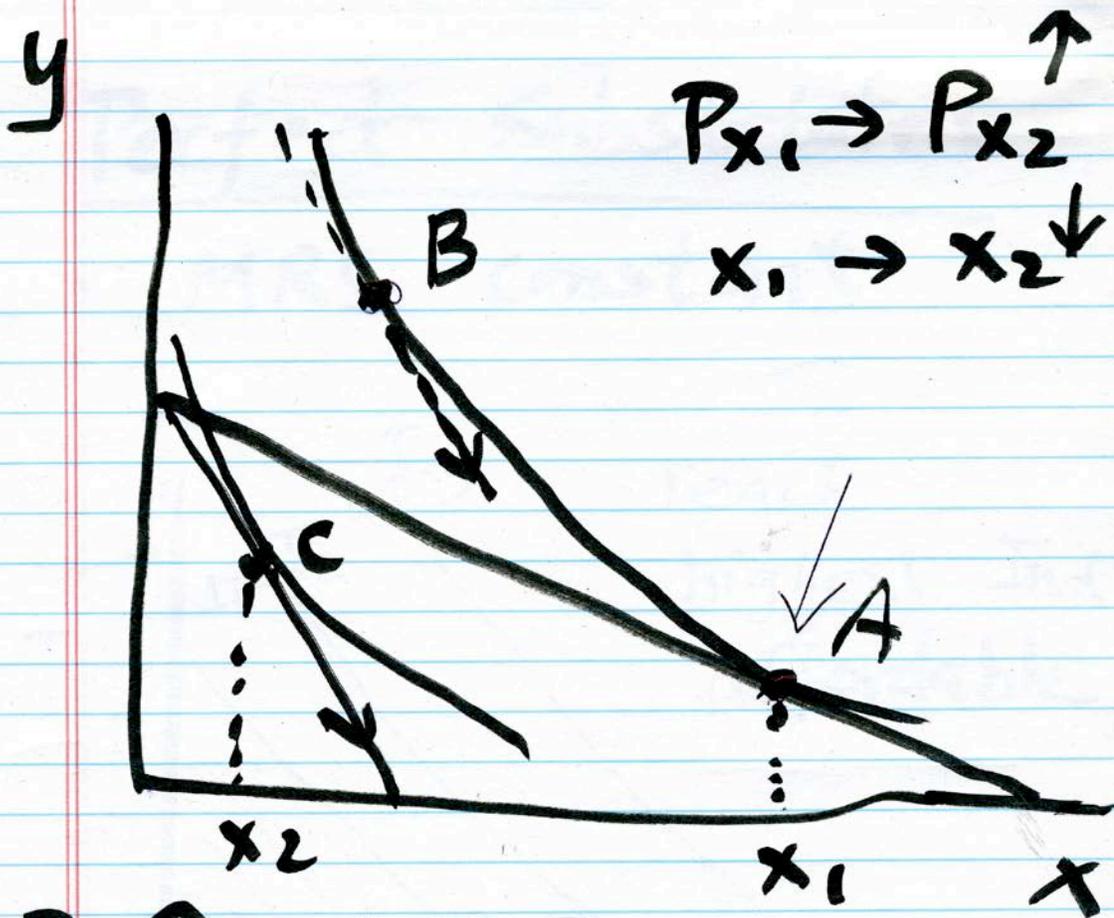
substitution effect

$B \rightarrow C$

income effect $\leftarrow$

Perfect Substitutes

MRS constant

I_3

I_1 I_2

reach
highest Ind
affordable

budget line
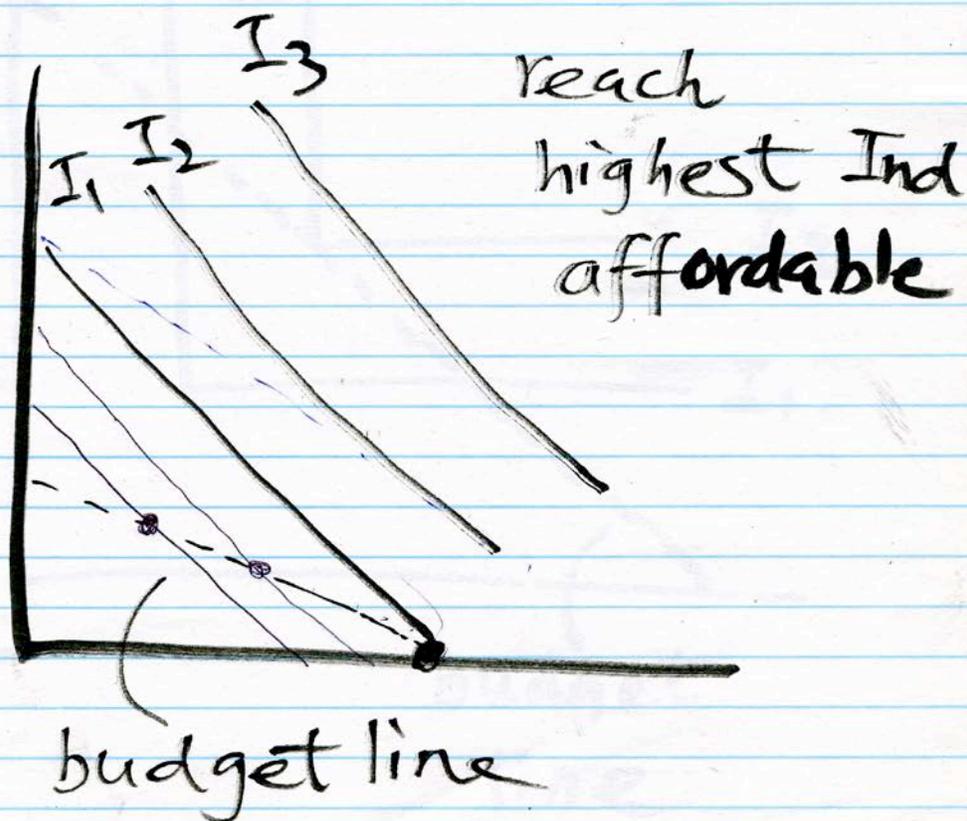
Perfect Complements

I_2

I_1

budget
line
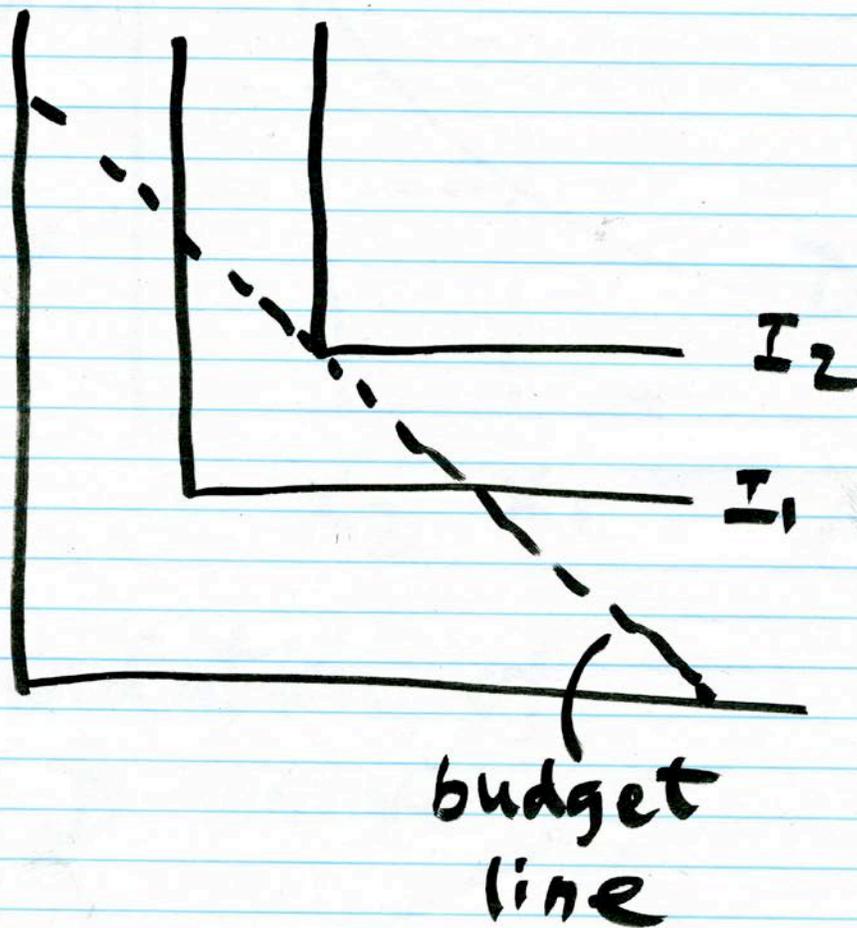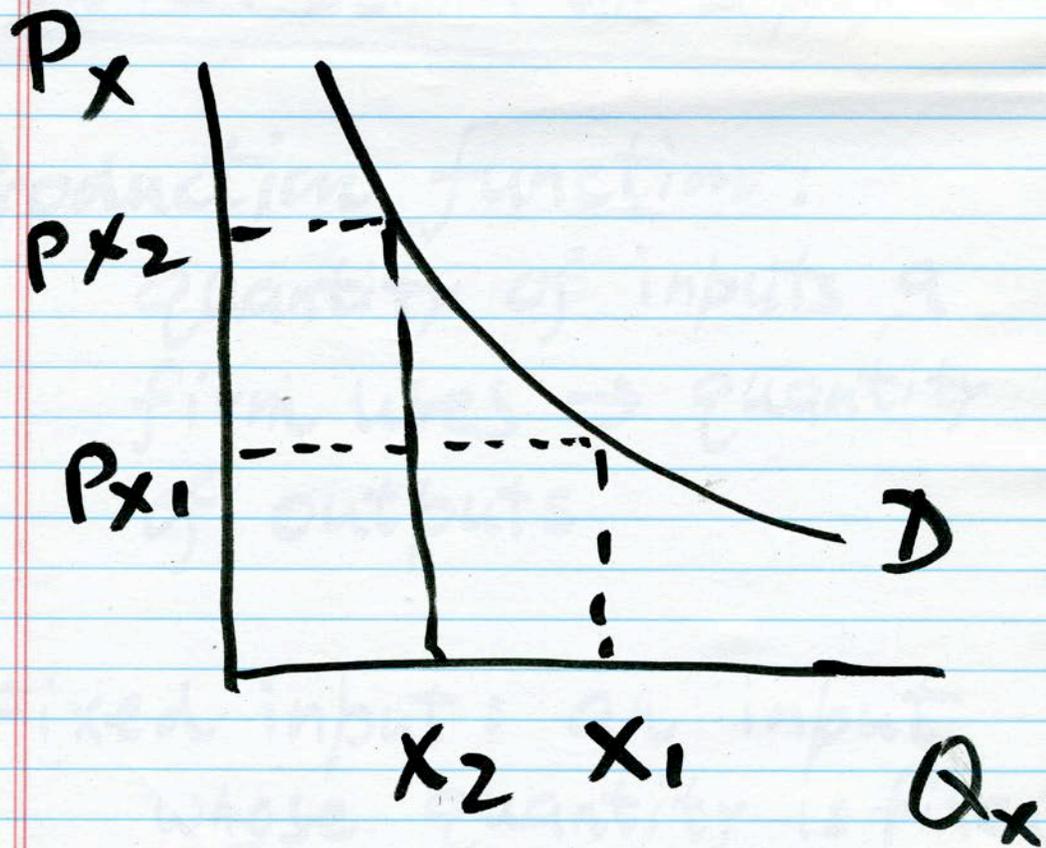
Foundation of
D-curve

ch 12. Behind the Supply-Curve

Production function:
    quantity of inputs a
    firm uses → quantity
    of outputs

    Fixed input: an input
      whose quantity is fixed
      for a period of time

Variable input: an input
    whose quantity the firm
    can vary at any time

long run: time period in which all inputs are variable

short run: time period in which at least one input is fixed

Total Product Curve: how the quantity of output depends on the quantity of variable input, for a given amount of fixed input