Budget Constraints

- 2 goods: food (F), clothing (C)
  - F = units of food, C=units of clothing
  - P_F=price of food, P_C=price of clothing
  - I=income
- Can only spend what you have:
  - $P_F F + P_C C = I$
- “y=mx+b”

Income, Price Changes

- $F = I/P_F - (P_C/P_F)C$
- F = intercept - slope*C
- Income affects intercept
- Prices affect slope

Complex Budget Constraints

- Cover charge, paid drinks

Cover charge, free popcorn

- Copies:
  - $.05 per copy for first 1000, then $0.02 per copy
  - I = $100.00

- $0.05 per copy if <1000 copies
- $0.02 per copy if >=1000 copies
- No kidding!

Consumer Choice

- Assume consumers choose consumption bundle to maximize utility, given their budget
- Consider A, B, C, D

$MRS=P_F/P_C$: why?

- Slope of budget constraint indicates rate at which market is "willing to trade" food for clothing
- Slope of indifference curve shows rate at which individual is willing to trade food for clothing
- Ergo…

Demand, with Math

- Maximize U(x,y) subject to the constraint that $P_x x+P_y y=I$
- $= U(x,y) + \lambda[I – P_x x – P_y y]$
- Get foc, solve for demands for x and y as functions of p_x, p_y, and I.

Intuition: foc (1) and (2) and MRS

- Recall, MRS = $(\partial U/\partial x)/(\partial U/\partial x)$
- (1) & (2) imply:

- Rearranging, equal marginal rule

Demand with Math, Example

- Max $U=x^a y^b$ s.t. $p_x x+p_y y=I$

- What can we say about these functions?