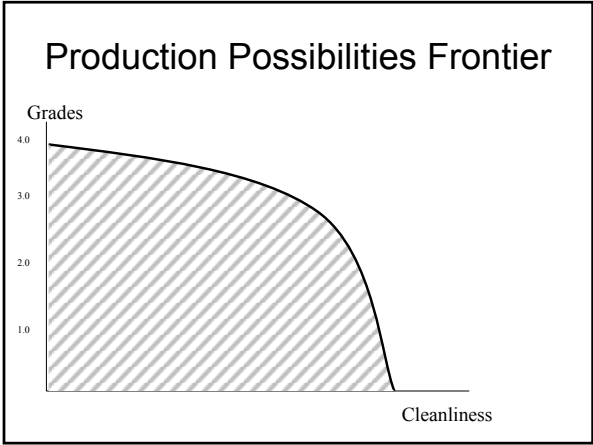
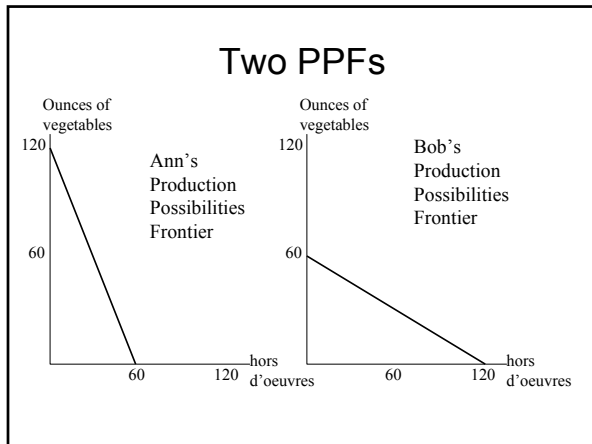


Trade



Production Possibilities Frontier

- Concave toward origin
 - diminishing marginal returns
- Slope = marginal cost of X in terms of Y
- $1/\text{Slope}$ = marginal cost of Y in terms of X

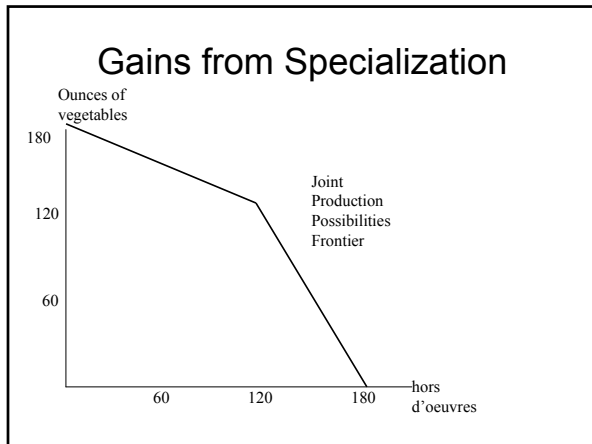


Comparative Advantage

- Ann has higher cost of hors d'oeuvres
- Hence Ann has lower cost of ounces
- Comparative advantage = lower opportunity cost
- Can't have a comparative advantage in all things

Autarky

- Autarky means without trade
- Suppose both value items at $\min\{\text{hors d'oeuvres, oz}\}$
- Individually, they can have 40 of both each.
- Together, they can have 60 of each by specializing



Sample Problem

- In H hours, George can produce \sqrt{H} pizzas or deliver H of them
- In H hours, Ann can produce H pizzas or deliver $2H$ of them
- If they both work the same number of hours, what minimizes the total time of making and delivering 20 pizzas?

Answer

- Let T be the total number of hours per person.
- Let George spend G hours making pizzas, and Ann spend A hours making pizzas.

Then

$$\sqrt{G} + A = 20$$

$$T - G + 2(T - A) = 20$$

Answer, Continued

- Solve for T eliminating A

$$T = \frac{1}{3}(20 + G + 2(20 - \sqrt{G}))$$

- Minimize over G (G=1)
- Solve for T = 59/3.
- Then check that no one puts in negative hours.

Discussion

- Ann's MC of pizzas is 2 deliveries
- George's cost of P pizzas is P² deliveries
- George's MC is 2P.
- Equating these says George produces 1 pizza, Ann produces 19

Ricardian Trade Model

- Nations specialize in comparative advantage
- Comparative advantage springs from abundance of inputs
- Labor skills, land, capital equipment, sunshine, warm weather, minerals

Factor Price Equalization

- Traded goods “embody factors of production” (inputs)
- Automobile has metals, plastics, labor, factory space, robots
- Soybeans have land, labor, fertilizer
- Trade can be thought of shifting inputs from country to country, thereby equalizing supply of inputs
- Yields “factor price equalization”
