Chapter 2: The Economic Problem.

I. The combination of limited resources and unlimited wants.
   A. Resources.
      1. land
      2. labor
      3. capital (including human capital)
      4. entrepreneurship
   B. Unlimited wants.
   C. The combination of limited resources and unlimited wants requires that we make choices. We must rank our wants and decide which wants to decide and which to leave unsatisfied.

II. The production possibilities frontier.
   A. represents the boundary between those combinations of goods and services that can be produced and those that cannot.
   B. a given PPF assumes that resources and technology are fixed.
   C. Illustration of a PPF

   [Diagram of production possibilities frontier with guns on the y-axis and butter on the x-axis]

   D. Properties of PPF
1. divides combinations between those that are attainable and unattainable.
2. inside the frontier: productive inefficiency
3. on the frontier: productive efficiency.
4. downward sloping: when the economy has productive efficiency, it is impossible to produce more of one good without giving up some of the other.
   i. the relationship between opportunity cost and slope.
5. bowed away from the origin: the “marginal opportunity cost” of a good will increase as its production increases. (Law of increasing marginal opportunity cost).
   i. corn
   ii. improving exam scores
   iii. improving life expectancy

E. Economic growth and the PPF.
1. A movement of the PPF upward and to the right represents economic growth.
2. Possible causes:
   i. more land, labor, or capital
   ii. better technology.
3. The costs of economic growth.
   i. PPF with consumer and capital goods.
   ii. the cost of more growth (more capital goods) is less consumption today.

III. Construction of a PPF: Comparative Advantage and the Gains from Trade.

A. Suppose that 20 Americans and 10 Germans have been stranded on an island. The only available food is fish and coconuts. If an American spends the entire day fishing, he catches 15 fish. If he gathers coconuts, he collects 30 in a day. A German, on the other hand, can catch 20 fish, or gather 20 coconuts in a day.

B. Which group has the comparative advantage in fishing? coconut gathering? Why?
1. To determine who has the comparative advantage (CA) in fishing, compute the opportunity cost of a fish for each worker type. For Americans, the opportunity cost of a fish is 2 coconuts. For Germans, the opportunity cost of a fish is 1 coconut. Since the Germans have the lower opportunity cost for a fish,
they have the CA in fishing. Similar reasoning shows that the Americans have the CA in coconuts.

2. Draw the daily PPF for the American and Germans combined -- assuming that they jointly agree to organize production efficiently and trade.

i. If all resources are devoted to coconuts, production will be 800 coconuts. If all resources are devoted to fish, production will be 500 fish. This gives the two intercepts on the PPF. Between the two points, the opportunity cost of fish is 1 coconut until all Germans are producing fish and all Americans are producing coconuts. Beyond that point (600 coconuts and 200 fish), the opportunity cost of a fish rises to 2 coconuts since Americans must be used to further increase fish production.

3. What is the opportunity cost of a fish if there is specialization and trade? (Note how the opportunity cost rises as fish production rises -- this is the law of increasing marginal opportunity cost.)

i. The opportunity cost of a fish is one coconut until fish production reaches 200. Beyond 200 fish, each additional fish costs 2 coconuts.

4. Suppose that prior to specialization and trade, each American and German spent half of their time fishing and and the other half gathering coconuts. How many fish and coconuts would each person produce on a daily basis? What would total production be? Plot this point on the PPF you drew above. Is this an "efficient" way to run this economy? why or why not? How does this demonstrate that specialization and trade make it possible for both the Americans and Germans to be better off?

i. If all workers divided their time equally between fishing and coconut gathering, production would be 250 fish and 400 coconuts. This point is labeled on the PPF above with an X. Since the point is inside the PPF, such an allocation of resources is inefficient because it is possible to increase the production of both fish and coconuts simultaneously.
5. If the Americans and Germans specialize and produce 400 fish, what is the maximum number of coconuts they can gather with their remaining time?
   i. 200

C. CONCLUSIONS

1. If people specialize in producing the product they have comparative advantage in and trade with each other, there will be more goods available to society.

2. The PPF with specialization generates increasing marginal opportunity cost.
D. What causes people (or countries) to have comparative advantage in different products?
   1. climate
   2. natural resources
   3. the human capital of its workers.

IV. The Efficient Use of Resources

A. Marginal cost of a good refers to the cost of one more unit of a good.
   1. the marginal cost of a good increases as production of the good increases (Law of increasing marginal cost)
   2. graphic representation

B. Marginal benefit of a good refers to the dollar value of the benefits (or willingness to pay) for one more unit of a good.
   1. the marginal benefit of a good decreases as consumption of the good increases. (Law of Diminishing Marginal Utility)
   2. graphic representation

C. The efficient level of production is that level where marginal benefit and marginal cost are equated.
   1. what happens when there is over-production? under-production? (graphic)
   2. when would the efficient level of production be zero? (graphic)