

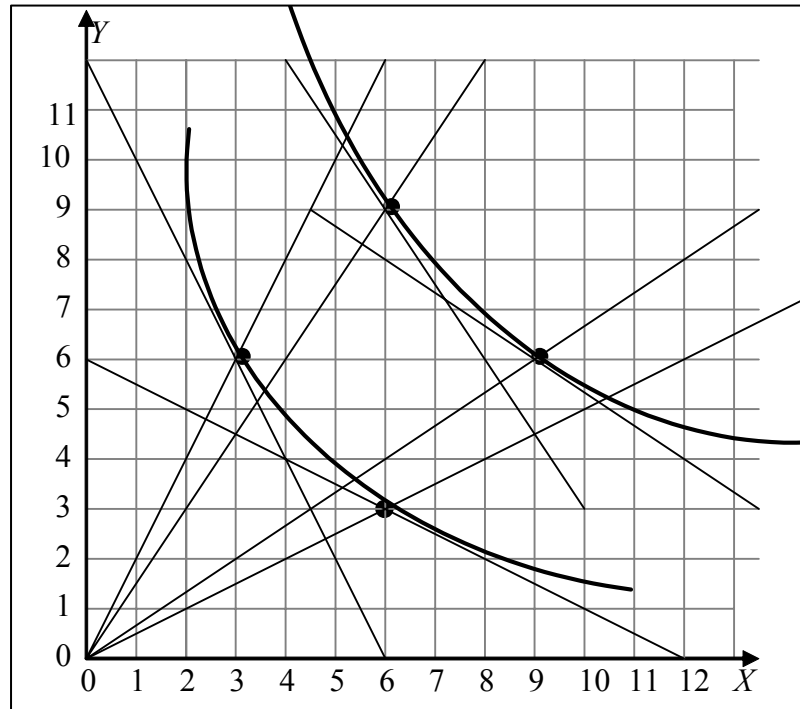
First Problem Set
Economics 433: Advanced International Trade

Due September 21, 2006
Prof. Tybout

Please print this problem set out and work directly on it. Show your calculations. If necessary, you may attach extra sheets.

Name _____ **Answer Key** _____

1. Consumers in the country of Eastland have identical homothetic tastes, so the slopes of their indifference curves are constant along any ray from the origin. Several of these curves are depicted below, along with tangent lines at the points marked with dots. (For example, the tangent at $X=6$, $Y=9$ has a slope of $-\frac{3}{2}$.)



- a) Fill in the table below giving the relative demand for X as a function of relative price. (Note that you can calculate slopes of the various lines in the graph above by counting grid lines.)

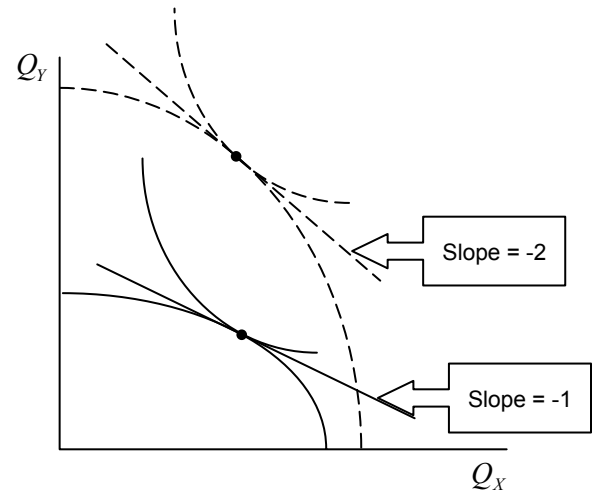
$p = P_x/P_y$	D_x/D_y
$\frac{1}{2}$	2
$\frac{2}{3}$	$\frac{3}{2}$
$\frac{3}{2}$	$\frac{2}{3}$
2	$\frac{1}{2}$

- b) If Eastland is endowed with 6 units of good X and 3 units of good Y, what relative prices will prevail in autarky? $p = P_x/P_y =$ $\frac{1}{2}$.
- c) Now suppose that Eastland opens to trade, and faces world prices $p^w = P_x^w/P_y^w = \frac{3}{2}$. Continuing to assume that it produces 6 units of good X and 3 units of good Y, what combination of X and Y will the people of Eastland consume? $X =$ 4 $Y =$ 6. Will it export or import good X? export. How many units of X will it trade? 2. (Hint: In answering this question, keep in mind that Eastland will consume along its free-trade budget line, and that your answer to part (a) should help you determine which point on that line it chooses.)

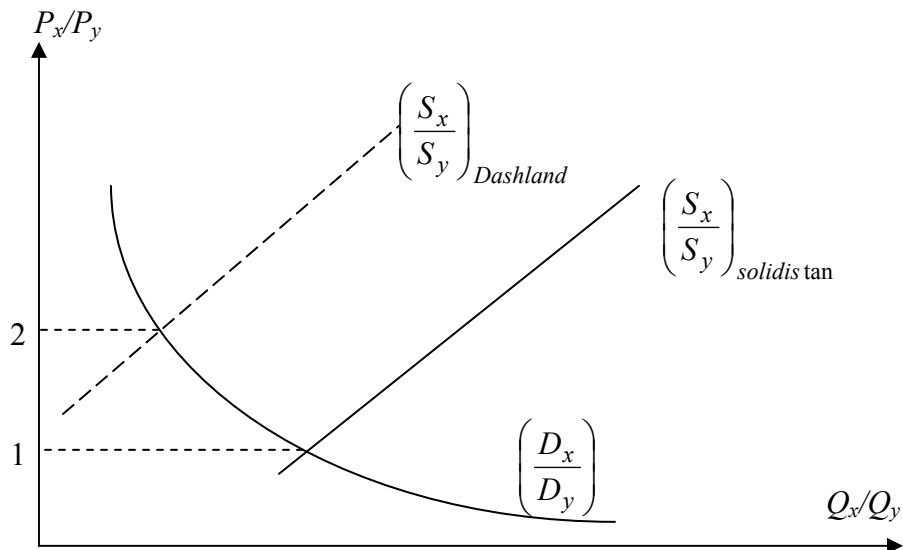
- d) Suppose Eastland is populated by green people, who specialize in producing X, and blue people, who specialize in producing Y. Which group of people will be made better off by trade? green. Will trade make Eastland better off overall? Carefully explain why or why not.

Eastland will be better off overall because Eastland would reach a higher social indifference curve. Even though there will be some losers, the winners could compensate the losers and still be better off.

2. The production possibility frontiers and for two countries—Dashland and Solidistan—are as diagrammed at right. (Dashland is represented with dotted lines.) Several social indifference curves are also provided. Use the diagram to answer the following questions.



- a) Draw the relative supply and relative demand curves for each of the two countries that reflect the information in this problem. You may draw all curves on the same set of axes, and you may assume that the countries share identical homothetic tastes. Label all parts of the diagram. Fill in numeric information where possible.



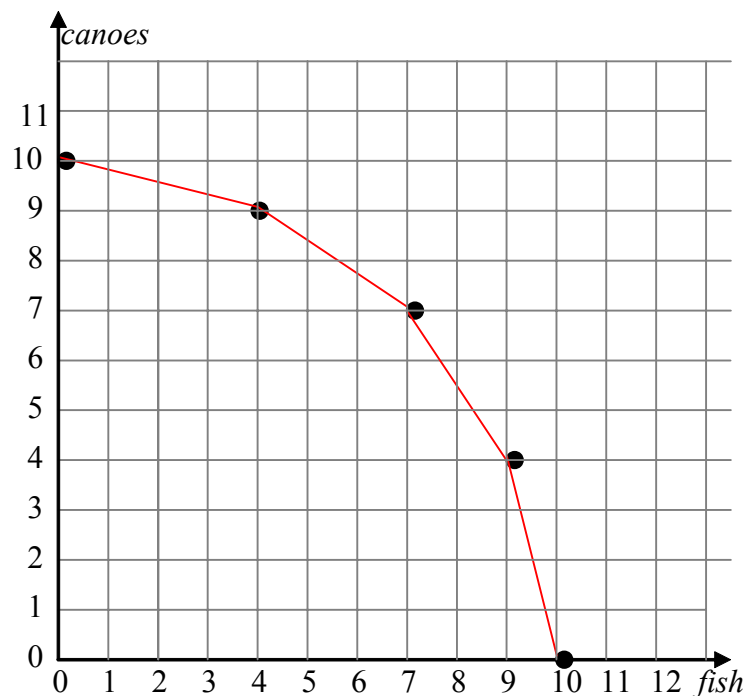
- b) Which good will Dashland export to Solidistan if the two country engage in trade?

Dashland would export good Y in exchange for X imports. With free trade, world prices will lie somewhere between 1 and 2, and in this price range Dashland has excess relative demand for X while Solidistan has excess relative supply of X..

3. On the tiny island of Tropicana, people survive by fishing from canoes. There are 4 workers on this island; their productive abilities are summarized in the table below. (Following tribal custom, each worker is identified by a letter.) For example, worker B is capable of producing 2 canoes per week *or* 3 barrels of fish, or any combination of these two extremes (e.g., she could spend half her week on each type of production and produce 1 canoe and 1½ barrels of fish).

<i>Worker</i>	<i>Canoes or</i>	<i>Barrels of fish</i>	<i>Marginal rate of Transformation</i>
A	1	4	$\frac{1}{4}$
B	2	3	$\frac{2}{3}$
C	3	2	$\frac{3}{2}$
D	4	1	4
Total	10	10	

- Fill in the marginal rate of transformation (canoes gained per barrel of fish foregone) for each worker in the last column of the table.
- Derive the production possibility frontier for this economy and graph it on the grid provided below. Identify the kink points in your PPF with dots.



- If the world relative price of fish is $p^w = P_{fish}^w / P_{canoes}^w = \frac{1}{2}$, and if Tropicana is in a free-trade equilibrium, what mix of canoes and fish will the people of Tropicana choose to produce? Number of canoes: 9 Number of fish: 4 . On the grid above, draw in the budget line associated with this production point and the world relative price.

d) Continue to assume that $p^w = \frac{1}{2}$, and suppose that at this relative price, consumers wish to purchase 3 canoes for every 5 fish: $D_{canoes}/D_{fish}|_{p^w=\frac{1}{2}} = \frac{3}{5}$. What consumption bundle will the people of Tropicana choose? $D_{fish} = \underline{10}$
 $D_{canoes} = \underline{6}$. Will this economy export fish or canoes? canoes
 How many units will it export? 3.

4. If a country were to undergo immiserizing growth, would everyone in this country be made worse off? Briefly explain.

No, with immiserizing growth, the price of the importable good is rising. Therefore, those who supply the factors that are important for importable good production may well gain.