1. Draw a circular-flow diagram. Identify the parts of the model that correspond to the flow of goods and services and the flow of dollars for each of the following activities.

**Answer:**

- c. $30
- a. $1

[Diagram showing the circular-flow model with identified parts: Markets for Goods and Services, Firms, Households, Markets for Factors of Production, goods and services like quart of milk, haircut, value of work, capital, and dollars like $10,000, $4.50, $30, etc.]

2. Imagine a society that produces military goods and consumer goods, which we’ll call “guns” and “butter.”

**Answer:**

[Graph showing the production possibilities frontier with points A, B, C, and D representing different combinations of guns and butter.]
a. It is bowed out because the opportunity cost of butter depends on how much butter
and how many guns the economy is producing. When the economy is producing a
lot of butter, workers and machines best suited to making guns are being used to
make butter, so each unit of guns given up yields a small increase in the
production of butter. Thus, the frontier is steep and the opportunity cost of
producing butter is high. When the economy is producing a lot of guns, workers
and machines best suited to making butter are being used to make guns, so each
unit of guns given up yields a large increase in the production of butter. Thus, the
frontier is very flat and the opportunity cost of producing butter is low.

b. Point A is impossible for the economy to achieve; it is outside the production
possibilities frontier. Point B is feasible but inefficient because it is inside the
production possibilities frontier.

c. The Hawks might choose a point like H, with many guns and not much butter.
The Doves might choose a point like D, with a lot of butter and few guns.

d. If both Hawks and Doves reduced their desired quantity of guns by the same
amount, the Hawks would get a bigger peace dividend because the production
possibilities frontier is much flatter at point H than at point D. As a result, the
reduction of a given number of guns, starting at point H, leads to a much larger
increase in the quantity of butter produced than when starting at point D.

3. Classify the following topics as relating to microeconomics or
macroeconomics.

Answer:

a. Microeconomics because Susan is an individual decision maker.
b. Macroeconomics because national saving and economic growth are economy-wide
phenomena.
c. Microeconomics because these are specific markets.
d. Macroeconomics because both are economy-wide phenomena
e. Microeconomics because McDonald’s is an individual decision maker in a specific
market.
4. Classify each of the following statements as positive or normative. Explain.

**Answer:**

a. Positive because it is a statement of fact that can be tested.

b. Normative because it is a statement of opinion that cannot be tested.

c. Normative because it is a statement of opinion that cannot be tested.

d. Positive because it is a statement of fact that can be tested.

e. Normative because it is a statement of opinion that cannot be tested. Presumably, those that are buying cars are of the opinion that the price is too high. Those that are selling cars are of the opinion that the price is too low.

5. American and Japanese workers can each produce 4 cars a year. An American worker can produce 10 tons of grain a year, whereas a Japanese worker can produce 5 tons of grain a year. To keep things simple, assume that each country has 100 million workers.

**Answer:**

a. | Amount produced per year (million) |
   | Car | Grain |
   | America | 400 | 1000 |
   | Japan | 400 | 500 |

b. ![Graph showing the production of cars and grain for America and Japan](image)
c.

<table>
<thead>
<tr>
<th>Opportunity Cost</th>
<th>One Car (in terms of grain)</th>
<th>One ton of grain (in terms of car)</th>
</tr>
</thead>
<tbody>
<tr>
<td>America</td>
<td>0.4</td>
<td>2.5</td>
</tr>
<tr>
<td>Japan</td>
<td>1.25</td>
<td>0.8</td>
</tr>
</tbody>
</table>

d. Neither country has an absolute advantage in producing cars, because they are equally productive (the same output per worker); America has an absolute advantage in producing grain, because it is more productive (greater output per worker).

e. Japan has a comparative advantage in producing cars, because it has a lower opportunity cost in terms of grain given up. The United States has a comparative advantage in producing grain, because it has a lower opportunity cost in terms of cars given up.

f. With half the workers in each country producing each of the goods, the United States would produce 200 million cars (50 million workers times 4 cars each) and 500 million tons of grain (50 million workers times 10 tons each). Japan would produce 200 million cars (50 million workers times 4 cars each) and 250 million tons of grain (50 million workers times 5 tons each).

g. From any situation with no trade, in which each country is producing some cars and some grain, suppose America changed one worker from producing cars to producing grain. That worker would produce 4 fewer cars and 10 additional tons of grain. Then suppose America offers to trade 7 tons of grain to Japan for 4 cars. America will do this because it values 4 cars at 10 tons of grain, so it will be better off if the trade goes through. Suppose Japan changes one worker from producing grain to producing cars. That worker would produce 4 more cars and 5 fewer tons of grain. Japan will take the trade because it values 4 cars at 5 tons of grain, so it will be better off. With the trade and the change of one worker in both America and Japan, each country gets the same amount of cars as before and both get additional tons of grain (3 for the United States and 2 for Japan). Thus, by trading and changing their production, both countries are better off.
6. Suppose that there are 10 million workers in Canada and that each of these workers can produce either 2 cars or 30 bushels of wheat in a year.

**Answer:**

a. Because a Canadian worker can make either 2 cars a year or 30 bushels of wheat, the opportunity cost of a car is 15 bushels of wheat. Similarly, the opportunity cost of a bushel of wheat is 1/15 of a car. The opportunity costs are the reciprocals of each other.

b.

c. From the figure above, Point B shows the outcome of trade proposal between two countries. Since Canada now consumes 200 million bushels of wheat which is greater than the amount consumed before and keep consuming 10 million cars as before, it is definitely better off. It should accept the deal.

7. The following table describes the production possibilities of two cities in the country of Baseballia:

<table>
<thead>
<tr>
<th></th>
<th>Pairs of Red Socks Per worker per hour</th>
<th>Pairs of White Socks Per worker per hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Chicago</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Answer:

a. In Boston, four red socks exchange for two white socks, thus two red socks exchange for one white sock. In Chicago, two red socks also exchange for one white sock.

b. Boston has an absolute advantage in the production of both red socks and white socks. Neither has a comparative advantage in the production of either sock because the opportunity cost of a white sock is two red socks in both cities.

c. No. There are no gains from trade when the opportunity costs are the same for both producers.

d. Boston’s absolute advantage in the production of socks has grown so Boston has the potential to be even better off materially than Chicago. However, the opportunity costs remain the same in each city, one white sock for two red socks, so there are no gains from trade. In both cases, neither producer has a comparative advantage in the production of either good.

8. Are the following statements true or false? Explain in each case.

Answer:

a. True; two countries can achieve gains from trade even if one of the countries has an absolute advantage in the production of all goods. All that is necessary is that each country have a comparative advantage in some good.

b. False; it is not true that some people have a comparative advantage in everything they do. In fact, no one can have a comparative advantage in everything. Comparative advantage reflects the opportunity cost of one good or activity in terms of another. If you have a comparative advantage in one thing, you must have a comparative disadvantage in the other thing.

c. False; it is not true that if a trade is good for one person, it cannot be good for the other one. Trades can and do benefit both sides especially trades based on comparative advantage. If both sides did not benefit, trades would never occur.
d. False; to be good for both parties, the trade price must lie between the two opportunity costs.

e. False; trade that makes the country better off can harm certain individuals in the country. For example, suppose a country has a comparative advantage in producing wheat and a comparative disadvantage in producing cars. Exporting wheat and importing cars will benefit the nation as a whole, as it will be able to consume more of both goods. However, the introduction of trade will likely be harmful to domestic auto workers and manufacturers.