Absolute and Comparative Advantage
A country's aggregate supply (AS) is impacted by demand and the abilities of those who make the goods, the producers/suppliers. **Absolute advantage** is a situation in which a person or group, like a country, can produce more of a good than another can. The country can simply make more of a product than another country can. During the 1910s and 1920s, no company came close to producing the number of cars that Henry Ford did. **Comparative advantage** is a situation in which a person or group, like a country, can produce a good with less opportunity cost than another can. McDonalds can certainly produce hamburgers more efficiently compared to Best Buy. In other words, production capability (absolute advantage) vs. opportunity cost (comparative advantage). Comparative advantage is the most important. Both countries benefit from trade and specialization of a product.
Absolute and Comparative Advantage (cont.)

Below, the USA has an absolute advantage in producing both food and clothing; they made more of both than Japan. But, comparative advantage matters more than absolute; comparative advantage determines who will produce what. To calculate opportunity costs = what we give up / what we get or what we now produce less of / what we now produce more of. The USA has a comparative advantage in food: $3/6 = .5$ vs. Japan $2/1 = 2$. .5 is less than 2. In clothing, Japan wins: $1/2 = .5$ vs. $6/3 = ?$. The lowest opportunity cost is the winner.

<table>
<thead>
<tr>
<th></th>
<th>Food</th>
<th>Clothing</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Japan</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Absolute advantage
Comparedative advantage

Output per Day of Work

give  get
Absolute and Comparative Advantage (cont.)

<table>
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<tbody>
<tr>
<td>United States</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Japan</td>
<td>6</td>
<td>3</td>
</tr>
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</table>

Which country has the absolute advantage and comparative advantage in each?
## Absolute and Comparative Advantage (cont.)

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<tbody>
<tr>
<td><strong>United States</strong></td>
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</tr>
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<td><strong>Japan</strong></td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

### Food Production:
- **United States**: 8 (Food) / 4 (Clothing) = 2
- **Japan**: 3 (Food) / 6 (Clothing) = 0.5

### Clothing Production:
- **United States**: 4 (Food) / 8 (Clothing) = 0.5
- **Japan**: 6 (Food) / 3 (Clothing) = 2
Absolute and Comparative Advantage (cont.)

In the graph below, also called a production possibilities curve or frontier, India has the absolute advantage in nuts and China in grapes. In grapes, China has the comparative advantage (what we give up / what we get), 10/10 (China) vs. 12/8 (India). In nuts, India has the comparative advantage, 8/12 (India) to 10/10 (China). China will grow grapes and India will grow nuts; both will benefit.
Absolute and Comparative Advantage (cont.)
In the production possibility curve/frontier below, India has the absolute advantage in nuts and grapes. In grapes, China has the comparative advantage, $4/6$ vs. $18/9$. In nuts, India has the comparative advantage, $9/18$ vs. $6/4$. China will grow grapes and India will grow nuts.
Absolute and Comparative Advantage - Questions

20. Brazil and Peru produce both coffee and wheat using labor as the only input. The table below shows the labor hours required to produce a unit of coffee and a unit of wheat in each country.

<table>
<thead>
<tr>
<th></th>
<th>Labor Hours per Unit of Coffee</th>
<th>Labor Hours per Unit of Wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Peru</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>

Based on the information in the table above, which of the following is true?

(A) Peru has a comparative advantage in producing coffee.
(B) Peru has an absolute advantage in producing wheat.
(C) Brazil has an absolute advantage in producing wheat.
(D) Peru has a comparative advantage in producing wheat.
(E) Brazil has a comparative advantage in producing wheat.
Absolute and Comparative Advantage - Questions

20. Brazil and Peru produce both coffee and wheat using labor as the only input. The table below shows the labor hours required to produce a unit of coffee and a unit of wheat in each country.

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<tbody>
<tr>
<td>Brazil</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Peru</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>

Based on the information in the table above, which of the following is true?

(A) Peru has a comparative advantage in producing **coffee**.

(B) Peru has an absolute advantage in producing wheat.

(C) Brazil has an absolute advantage in producing wheat.

(D) Peru has a comparative advantage in producing wheat.

(E) Brazil has a comparative advantage in producing wheat.

Brazil has to give up 12 units of coffee vs. Peru's 6
Absolute and Comparative Advantage - Questions

46. Dana and Robin produce smoothies and pizza.
   In one hour Dana can make 20 smoothies or 10 pizzas. In one hour Robin can make 18 smoothies or 6 pizzas. Which of the following statements is true?

(A) Robin has an absolute advantage in making smoothies and a comparative advantage in making pizzas.
(B) Robin has both an absolute advantage and a comparative advantage in making pizzas.
(C) Dana has a comparative advantage in making both smoothies and pizzas.
(D) Dana has a comparative advantage in making pizzas, and Robin has a comparative advantage in making smoothies.
(E) Dana has a comparative advantage in making smoothies, and Robin has a comparative advantage in making pizzas.
Absolute and Comparative Advantage - Questions

46. Dana and Robin produce smoothies and pizza.
   In one hour Dana can make 20 smoothies or 10 pizzas. In one hour Robin can make 18 smoothies or 6 pizzas. Which of the following statements is true?

(A) Robin has an absolute advantage in making smoothies and a comparative advantage in making pizzas.
   - nope, Robin does: 18 to 20

(B) Robin has both an absolute advantage and a comparative advantage in making pizzas.
   - nope, 6 to 10

(C) Dana has a comparative advantage in making both smoothies and pizzas.
   - nope, Robin does: smoothies, .33 to .5

Dana has a comparative advantage in making pizzas, and Robin has a comparative advantage in making smoothies.

(E) Dana has a comparative advantage in making smoothies, and Robin has a comparative advantage in making pizzas.
   - nope, Robin does: smoothies, .33 to .5
31. The table below shows the number of hours it takes for Kim to install a computer or to paint a garage and for Maria to install a computer or to paint a garage.

<table>
<thead>
<tr>
<th>Task</th>
<th>Kim</th>
<th>Maria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install computer</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Paint garage</td>
<td>10</td>
<td>12</td>
</tr>
</tbody>
</table>

If tasks are assigned according to comparative advantage, which of the following is true?

(A) Kim should perform both tasks.
(B) Maria should perform both tasks.
(C) Kim should install computers and Maria should paint garages.
(D) Kim should paint garages and Maria should install computers.
(E) Kim and Maria should both install computers.
Absolute and Comparative Advantage- Questions

31. The table below shows the number of hours it takes for Kim to install a computer or to paint a garage and for Maria to install a computer or to paint a garage.

<table>
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<th>Task</th>
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<th>Maria</th>
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</thead>
<tbody>
<tr>
<td>Install computer</td>
<td>2 hrs</td>
<td>4 hrs</td>
</tr>
<tr>
<td>Paint garage</td>
<td>10 hrs</td>
<td>12 hrs</td>
</tr>
</tbody>
</table>

If tasks are assigned according to comparative advantage, which of the following is true?

(A) Kim should perform both tasks.
(B) Maria should perform both tasks.
(C) Kim should install computers and Maria should paint garages. [Correct answer]
(D) Kim should paint garages and Maria should install computers. [Correct answer]
(E) Kim and Maria should both install computers.
Absolute and Comparative Advantage- Questions

47. Using the same amount of time and resources, 
   Jack can assemble either 10 bikes or 5 computers, 
   whereas Sam can assemble either 5 bikes or 5 
   computers. Based on the data, which of the 
   following statements is correct?

   (A) Sam has an absolute advantage in assembling 
      bikes.
   (B) Sam has an absolute advantage in assembling 
      computers.
   (C) Sam has a comparative advantage in 
      assembling bikes.
   (D) Jack has a comparative advantage in 
      assembling bikes.
   (E) Jack has a comparative advantage in 
      assembling both bikes and computers.

50. If nations specialize according to their 
    comparative advantage and engage in 
    international trade with each other, each 
    nation can

   (A) produce outside its production possibilities 
      curve
   (B) consume outside its production possibilities 
      curve
   (C) shift its production possibilities curve to the 
      right
   (D) become more self-sufficient
   (E) produce more of all goods
Absolute and Comparative Advantage - Questions

47. Using the same amount of time and resources, Jack can assemble either 10 bikes or 5 computers, whereas Sam can assemble either 5 bikes or 5 computers. Based on the data, which of the following statements is correct?

(A) Sam has an absolute advantage in assembling bikes.

(B) Sam has an absolute advantage in assembling computers.

(C) Sam has a comparative advantage in assembling bikes.

(D) Jack has a comparative advantage in assembling bikes.

(E) Jack has a comparative advantage in assembling both bikes and computers.

Jack Sam
10b 5b
5c 5c

50. If nations specialize according to their comparative advantage and engage in international trade with each other, each nation can

(A) produce outside its production possibilities curve

(B) consume outside its production possibilities curve

(C) shift its production possibilities curve to the right

(D) become more self-sufficient

(E) produce more of all goods

not necessarily
Macro./Micro. Do-Now

Please do this:

1. Define absolute advantage.

2. Define comparative advantage and its necessary formula.

3. In each, which country has the absolute advantage. Explain using marginal analysis. In each, which country has the comparative advantage? Show your work.

<table>
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<tr>
<td><strong>Japan</strong></td>
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</table>
1. **absolute advantage** - a situation in which a person or group, like a country, is more efficient at producing a good than another can.

2. **comparative advantage** - a situation in which a person or group, like a country, can produce a good with less opportunity cost than another can (what we give up / what we get).

3. 

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- United States has an absolute advantage in producing both food and clothing.
- Japan has an absolute advantage in producing clothing.
- United States has a comparative advantage in producing food.
- Japan has a comparative advantage in producing clothing.

<table>
<thead>
<tr>
<th>United States</th>
<th>Food</th>
<th>Clothing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8; 4</td>
<td>4; 8</td>
</tr>
<tr>
<td>Japan</td>
<td>3; 6</td>
<td>6; 3</td>
</tr>
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</table>

United States produces 8 units of food and 4 units of clothing with 2 units of labor. Japan produces 3 units of food and 6 units of clothing with 2 units of labor.
Microeconomics Do-Now

Please do this:
1. Who has the absolute and comparative advantages below? Show your calculations.

![Graph showing production possibilities for Tom and Mary](image-url)
Microeconomics Do-Now

1. absolute advantage: grapes- Mary, nuts- Tom
   comparative advantage: grapes- $\frac{5}{9}$ or $\frac{7}{8}$
   comparative advantage: nuts- $\frac{9}{5}$ or $\frac{8}{7}$

\[
\begin{align*}
5 & \quad \frac{7}{9} \\
\frac{40}{72} & \quad \frac{63}{72} \\
\frac{9}{5} & \quad \frac{8}{7} \\
\frac{63}{35} & \quad \frac{40}{35}
\end{align*}
\]
Microeconomics Do-Now

Please do this:

2. Who has the absolute and comparative advantage below? Show your calculations.

<table>
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<tr>
<th></th>
<th>Labor Hours per Unit of Coffee</th>
<th>Labor Hours per Unit of Wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adam</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Stacy</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>
Microeconomics Do-Now

2. absolute advantage: coffee- Stacy   wheat- no one
   comparative advantage: coffee- 3/4 or 3/6
   comparative advantage: wheat- 4/3 or 6/3

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.75 or .5
1 \frac{1}{3} or 2
1. The following table shows the number of donuts or cupcakes that John and Erica can each produce in one day.

<table>
<thead>
<tr>
<th></th>
<th>Donuts</th>
<th>Cupcakes</th>
</tr>
</thead>
<tbody>
<tr>
<td>John</td>
<td>200</td>
<td>100</td>
</tr>
<tr>
<td>Erica</td>
<td>150</td>
<td>50</td>
</tr>
</tbody>
</table>

(a) Who has the absolute advantage in producing donuts? Explain.

(b) Who has the comparative advantage in producing donuts? Explain.

(c) Assume that Erica discovers a new cupcake production technique that will increase her daily production of cupcakes only. Using donuts on the horizontal axis, draw a correctly labeled production possibilities curve for Erica, before and after the technology change in cupcake production.
**Microeconomics Do-Now**

1. **3 points** $(1 + 1 + 1)$

(a) 1 point:
- One point is earned for stating that John has the absolute advantage in producing donuts and for explaining that John can produce more donuts than Erica in one day ($200 > 150$).

(b) 1 point:
- One point is earned for stating that Erica has a comparative advantage in producing donuts and for explaining that Erica’s opportunity cost of producing one donut (1/3 of a cupcake) is less than John’s opportunity cost of producing one donut (1/2 of a cupcake).

(c) 1 point:
- One point is earned for drawing a correctly labeled graph of Erica’s production possibilities curve, before the technology change, and for rotating the production possibilities curve outward showing greater production of cupcakes after the technology change.
2. Country X and Country Y are trading partners, and both produce furnaces and solar panels. The countries can produce the following amounts using equal amounts of resources.

Country X: 6 furnaces or 8 solar panels
Country Y: 6 furnaces or 12 solar panels

(a) Which country has an absolute advantage in producing solar panels?
(b) Calculate the opportunity cost of a furnace in Country Y.
(c) Which country has the comparative advantage in producing furnaces? Explain.
Microeconomics Do-Now

2. **3 points** \((1 + 1 + 1)\)

(a) 1 point:
- One point is earned for stating that Country Y has an absolute advantage in producing solar panels.

(b) 1 point:
- One point is earned for calculating the opportunity cost of a furnace for Country Y: 2 solar panels per furnace.

(c) 2 points:
- One point is earned for stating that Country X has the comparative advantage in producing furnaces.
- One point is earned for explaining that Country X has a lower opportunity cost of producing furnaces than Country Y.