Name___________________________

1) Suppose that we have the following information about productivity (in terms of production per hour) for the following countries:

<table>
<thead>
<tr>
<th>Country</th>
<th>Cheese (kg/hr)</th>
<th>Wine (Liters/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Germany</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>England</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

a) For each country, calculate the opportunity cost of cheese production. Rank the three countries in term of opportunity cost in cheese production.

Starting with France, to produce cheese requires ½ an hour of labor. With that ½ of an hour, they could’ve produced 5*(1/2) = 5/2 = 2.5 units of wine.

In Germany, one unit of cheese requires 1/3 of an hour. With that 1/3 of an hour, they could’ve produced 6*(1/3) = 2 units of wine.

In England, one unit of cheese requires 1/8 of an hour of labor. With that 1/8 of an hour, they could’ve produced 4*(1/8) = .5 units of wine.

So, England is the best at cheese, followed by Germany, Followed by France

b) Suppose that the price of cheese is 40 Euros per kg while the price of wine was 18 Euros per liter. What production pattern will emerge across Europe (i.e. who will produce what?)

18 Euros per liter of wine and 40 Euros per kg of cheese implies a relative price of cheese equal to (40/18) = 2.22 units of wine per unit of cheese. At this relative price, England and Germany specialize in cheese while France specializes in wine.
c) At the prices from (b), what will wages be in each of the three countries?

**England Specializes in Cheese.** The wages in the cheese industry will equal the productivity per hour in cheese times the price of cheese.

\[
w = 8(40) = 320 \text{ Euros per hour}.
\]

(Note: if England were to produce wine, wages in the wine industry would be \(4 \times 18 = 72\) Euros per hour…good luck finding anyone to work in the wine industry in England!)

**France Specializes in Wine.** The wages in the wine industry will equal the productivity per hour in wine times the price of wine.

\[
w = 5(18) = 90 \text{ Euros per hour}.
\]

(Note: if France were to produce cheese, wages in the cheese industry would be \(2 \times 40 = 80\) Euros per hour…good luck finding anyone to work in the cheese industry in France!)

**Germany Specializes in Cheese.** The wages in the cheese industry will equal the productivity per hour in cheese times the price of cheese.

\[
w = 3(40) = 120 \text{ Euros per hour}.
\]

(Note: if Germany were to produce wine, wages in the wine industry would be \(6 \times 18 = 108\) Euros per hour…good luck finding anyone to work in the wine industry in Germany!)

d) Suppose that inflation averages 4% per year. How will production patterns change over time? Explain.

*Production patterns are independent of inflation because relative prices will be constant.*