1. **Explain how the Production Possibility Frontier (PPF) brings together the concepts of scarcity, choice, and opportunity cost, and why economists prefer the Principle of Comparative Advantage over the Principle of Absolute Advantage for specialization and trade.**

The Production Possibility Frontier(PPF) shows all possible combinations of the amounts of the products that can be produced when the existing resources and used fully and efficiently. That means the PPF gives you the best choice for using the limit resources to produce the most quantities of the goods. For example, you have 2000 wood can produce 500 desks or 1000 chairs. The PPF gives you the most efficient choice to use the wood wisely. We suppose using the wood all fully and efficiently. If you use half of the wood for desk and the rest of wood for chair. You will have 250 desks and 500 chairs. However, in the market, you need 150 desks and 1000 chairs. So you could make a choice to scarcity 100 desks for 200 chairs by using the same amount of the wood. Or you can make another choice by using all of the wood to produce 1000 chairs. Thus, the opportunity cost depends on the scarcity in the market and the choice made by the businesses what PPF shows the best way to get it done. The economists prefer the Principle of Comparative Advantage over the Principle of Absolute Advantage for specialization and trade that because we want to use the less input to produce more goods than the less cost to do it. As we all know, the resources always limited, even you can produce the goods in lower cost, the quantity of the goods will still be the same. However, if you can lower the input to make the products, the amounts of the outputs could be raised. So you can sell them to more people.

1. **The following table shows hypothetical the PPFs of China and the United States.**

|  |  |  |
| --- | --- | --- |
|  | Computer | Televisions |
| China | 150 | 300 |
| USA | 450 | 150 |

1. **Draw separate PPFs showing production of the USA and China before specialization.**
2. **Calculate the opportunity cost**

Base on the data,

USA: 450 computers = 150 televisions 1 computer = 150/450 = 0.3 television

150 televisions = 450 computers 1 televisions = 450/150 = 3 computers

China: 150 computers = 300 televisions 1 computer = 300/150 = 2 televisions

300 televisions = 150 computers 1 televisions = 150/300= 0.5 computers

So the USA is more efficient to produce on the computers, however, China is more efficient to produce the televisions. So we can say the USA should specialize in computer, and China should specialize in televisions.

1. **Show the output of both countries in a graph after specialization. Are these countries better-off with specialization? Explain why.**

These countries are better off with specialization. The reason is the USA only can produce 225 computers and 75 televisions, China is 75 computers and 150 televisions. So total 300 computers and 225 televisions before the specialization. However, we specialize the USA should produce computers and China should produce televisions. Thus, we can have total 450 computers and 300 televisions. This is not only we are more efficiency to produce the products, but we decrease the cost of products. In addition, the global output consumption is increased. Furthermore, the countries are allowed to move beyond their original PFF. Thus, they become interdependent and Trade will take place.