International Monetary Systems

Topic: Interdependence and Gains from Trade

Contact Information

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Agenda:

(1) Discuss syllabus

(2) Introduce groups and presentation assignment

(3) Interdependence and gains from trade


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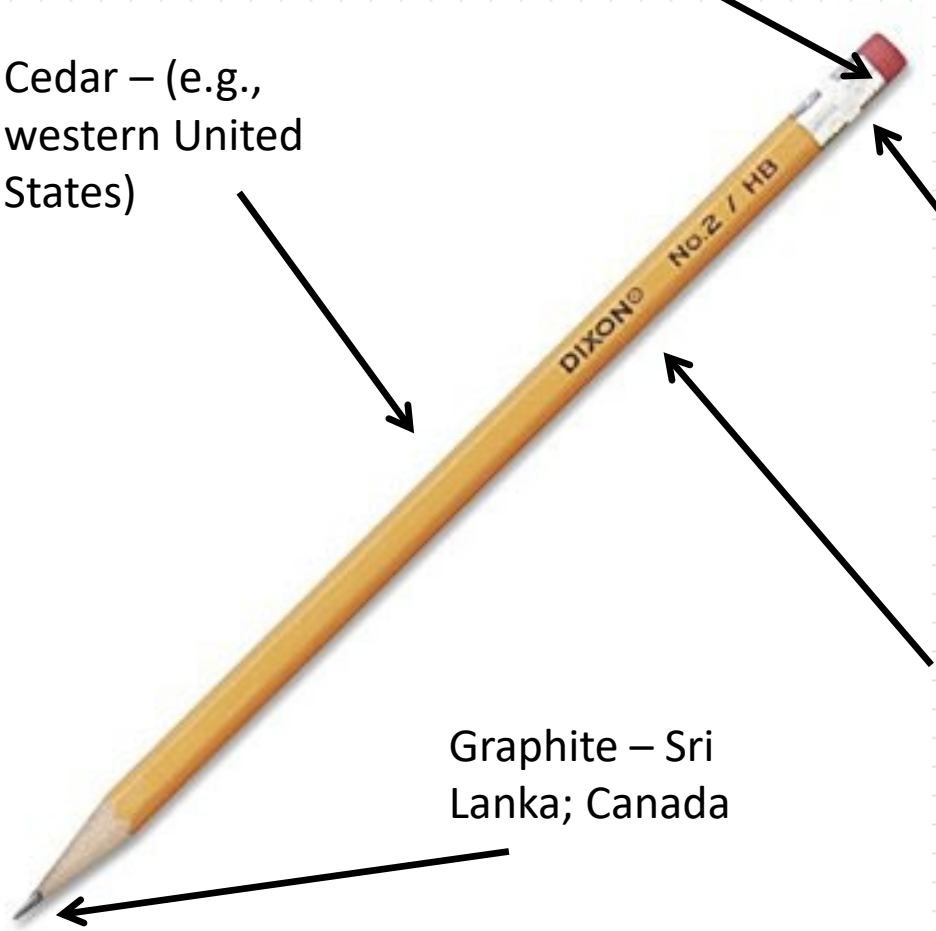
2HB

Nicolas-Jacques Conte

Rubber (e.g., D.R. of the Congo)

Cedar – (e.g., western United States)



Zinc and Copper – e.g., Chile

Yellow pigment from castor plant - India

Graphite – Sri Lanka; Canada

Why do we trade?

What to export and what to import?

US – exports (1.4 T): computers and machinery, aircraft, vehicles, fuels

US – imports (2.16 T): cars, fuels, computers, parts

France – exports (613 B): aircraft, cars, engines, pharmaceuticals, beverages

France – imports (695 B): fuel, parts

Source: https://atlas.media.mit.edu/en/profile/country/usa/

Question: should Antoine Griezmann cut his own lawn?

What is the cost of attending university?

Opportunity Cost:

The value of what you give up when you make a choice.

Two Country Example

- Two countries: the United States and France
- Two goods: computers and wine
- One resource: labor, measured in hours

- We will look at how much of both goods each country produces and consumes

  - *if the country chooses to be self-sufficient*
  - *if it trades with the other country*

Two Country Example: Production Possibilities in France

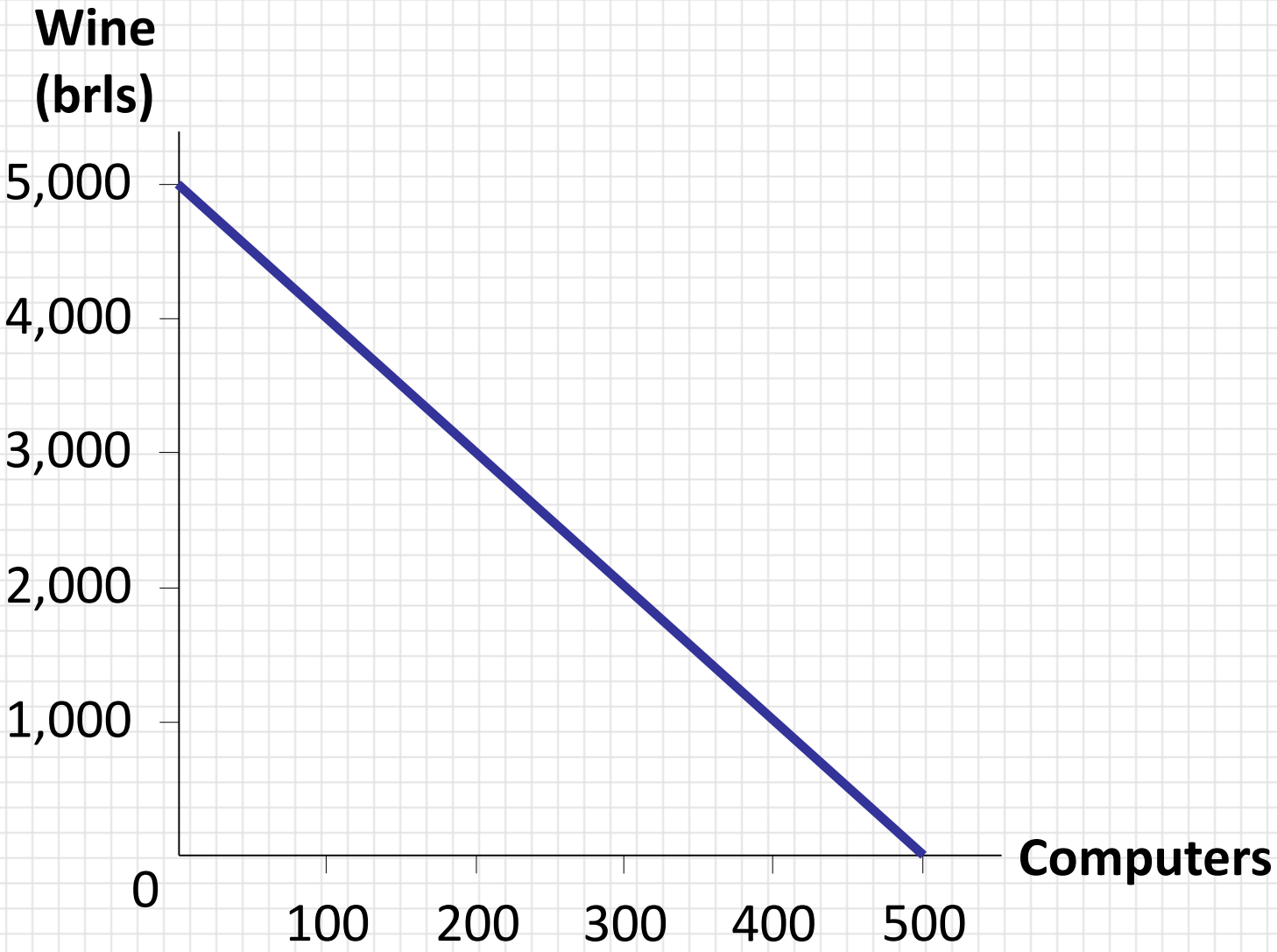
- France has 50,000 hours of labor available for production, per month.
- Producing one computer requires 100 hours of labor.
- Producing one barrel of wine requires 10 hours of labor.

Productions Possibilities in France

- Two goods can be produced in the economy (computers and wheat)
- It takes 100 hours to make a computer
- It takes 10 hours to make a unit (barrel) of wine
- There are 50,000 labor hours available.

- **What is the opportunity cost when increasing production from 100 computers to 200 computers?**

Production Possibilities Frontier (PPF)



The Shape of the PPF

- The PPF could be a straight line or curved

- Shape depends on what happens to opportunity cost as economy shifts resources from one industry to the other.

  - If opportunity cost remains constant, PPF is a straight line.

  - If opportunity cost of a good rises as the economy produces more of the good, PPF is curved

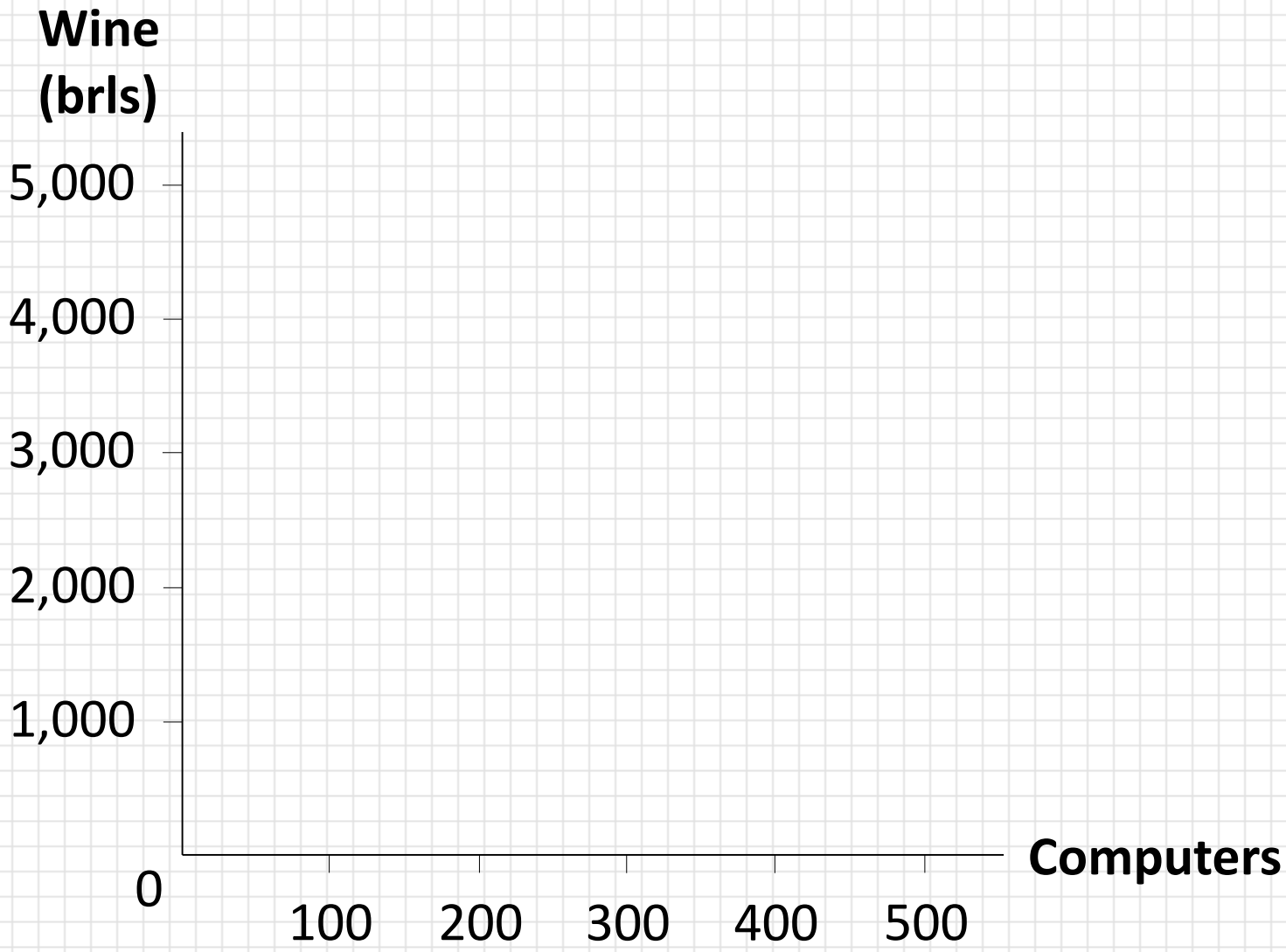
Why the PPF Might Be Curved

The PPF: A Summary

- The PPF shows all combinations of two goods that an economy can possibly produce, given its resources and technology.

- The PPF illustrates the concepts of **scarcity, tradeoffs, opportunity cost and efficiency.**

France Without Trade: Half time on each



United States production possibilities

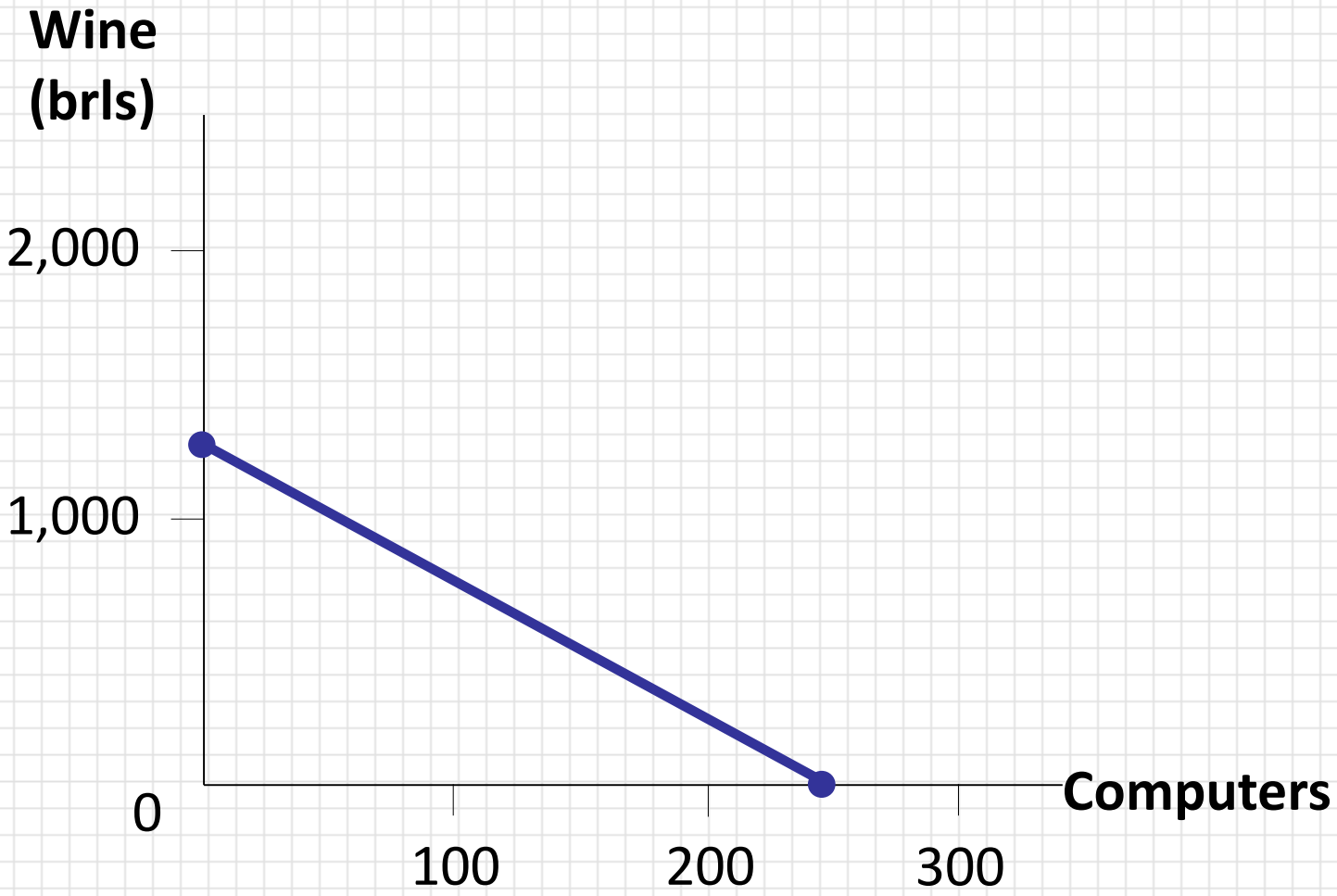
- US has 30,000 hours of labor available for production, per month.
- Producing one computer requires 125 hours of labor.
- Producing one barrel of wine requires 25 hours of labor.

Question: ***which country produces computers using fewer labor hours?***

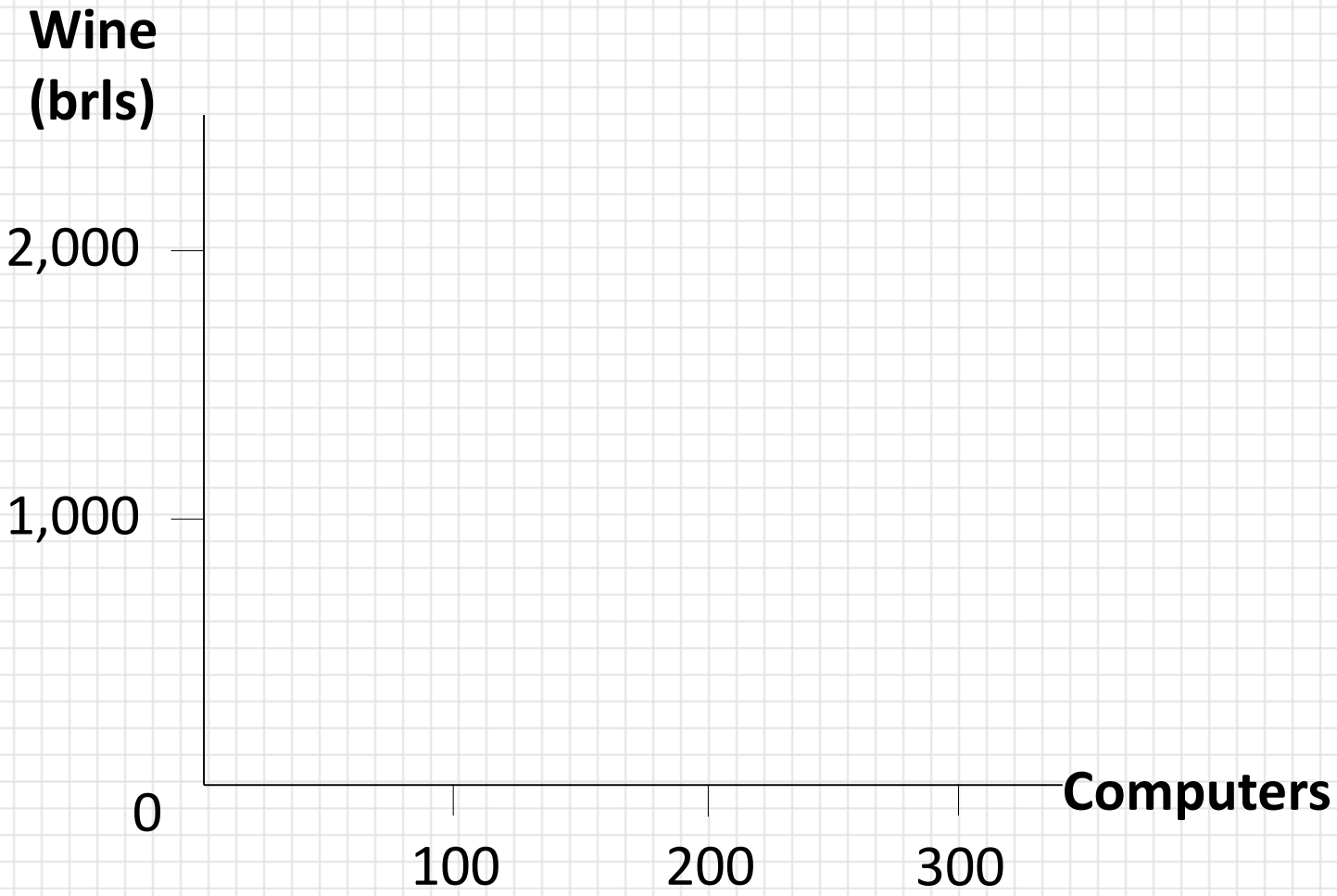
for ***wine?***

- United States has 30,000 hours of labor available for production, per month.
- Producing one computer requires 125 hours of labor.
- Producing one barrel of wine requires 25 hours of labor.
- ***If the US spends all of its time making computers, how many computers can it make?***
- ***Answer: 240***

The PPF for the United States



U.S. Without Trade: Half time on each



Consumption With and Without Trade

- ***Baseline situation*** without trade:
  - France consumers get 250 computers and 2500 barrels of wine.
  - United States consumers get 120 computers and 600 barrels of wine.

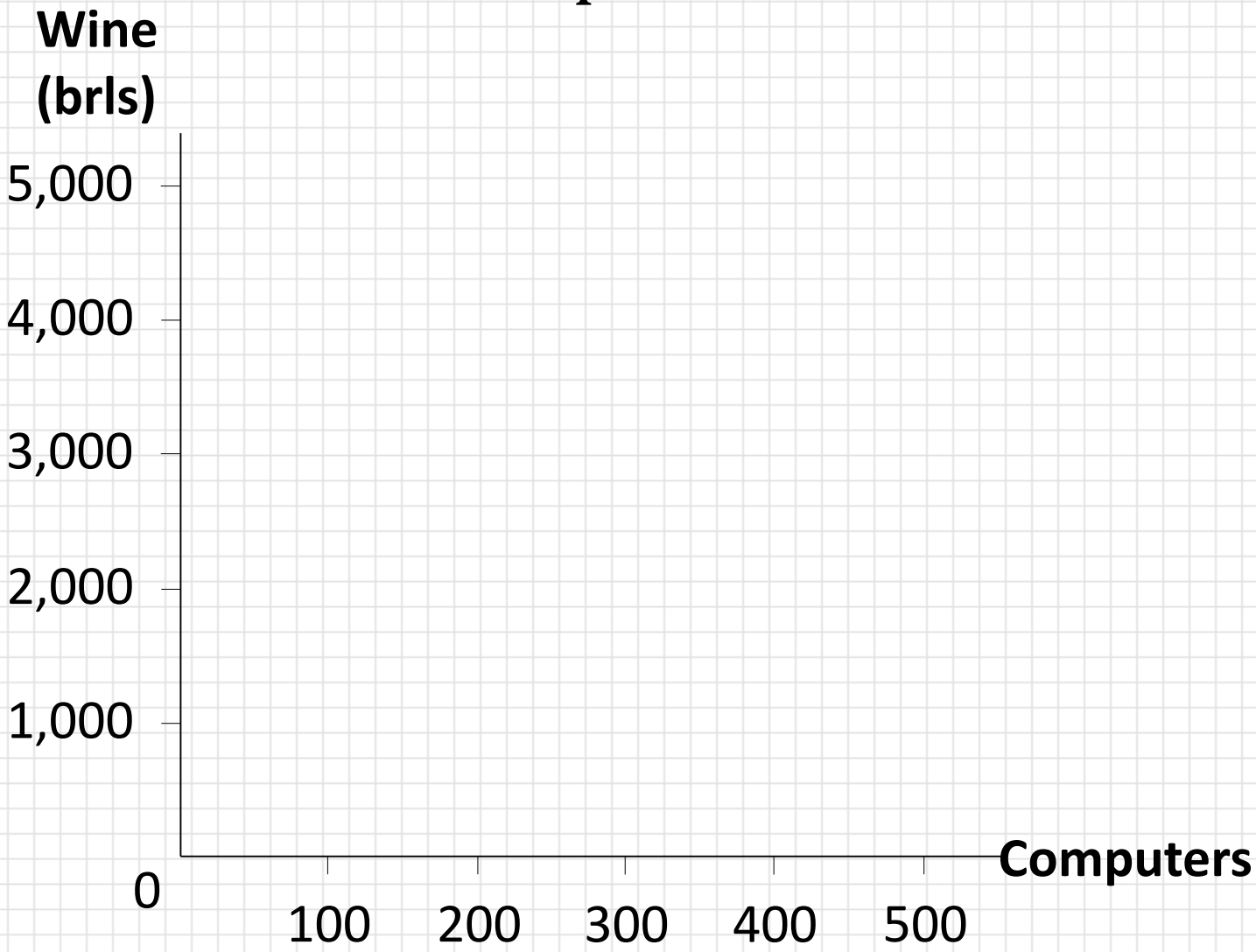
- ***Key point***: for trade to be beneficial for both countries, consumption levels for both goods must be weakly higher than the baseline after trading.

Specialization

Suppose France produces 3400 barrels of wine. ***How many computers would France be able to produce with its remaining labor?***

Answer: 160

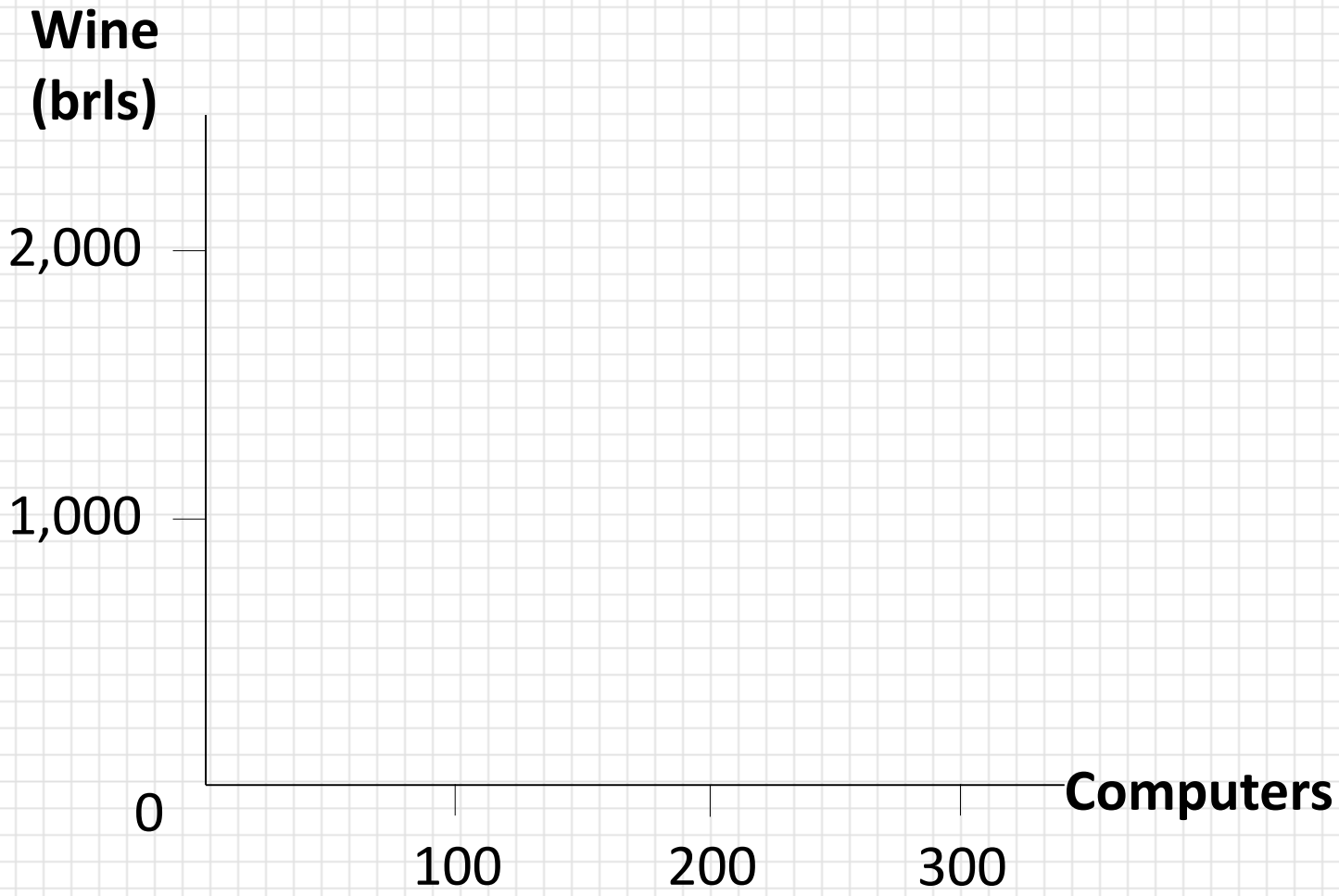
France Specialized Production



Specialization

Suppose the US produces 240 computers.
How many barrels of wine would the US be able to produce with its remaining labor?

United States Specialized Production



After Specialized Production

France

	Baseline	Specialized Production	Balance
Computers	250	160	**-90**
Wine	2,500	3400	**+900**

United States

	Baseline	Specialized Production	Balance
Computers	120	240	**+120**
Wine	600	0	**-600**

Exports & Imports

- **Exports**:
  goods produced domestically and sold abroad

  To export means to sell domestically produced goods abroad.

- **Imports**:
  goods produced abroad and sold domestically

  To import means to purchase goods produced in other countries.

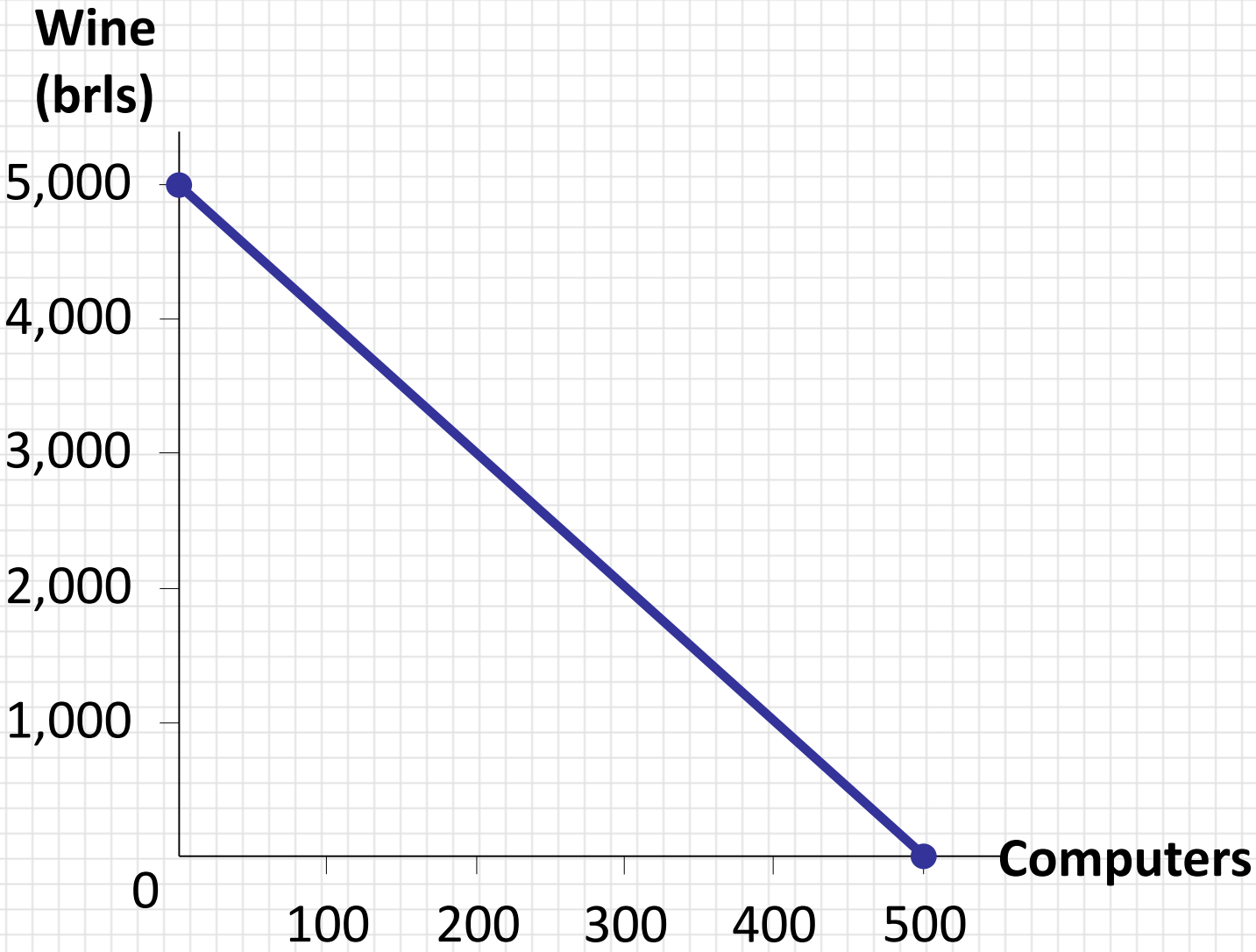
Trade Example (specialization)

Suppose France exports 700 barrels of wine to the US, and imports 110 computers from the US.

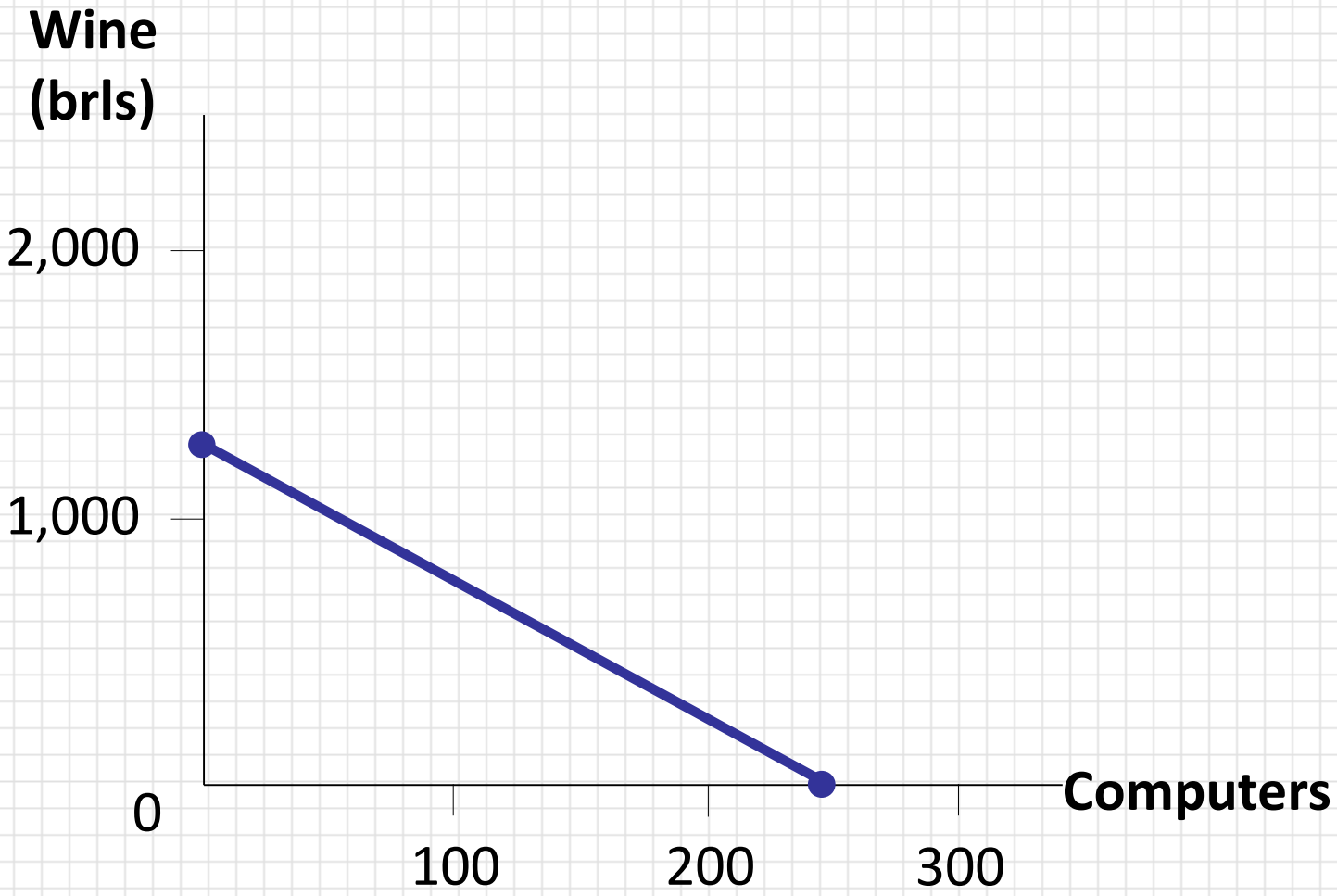
- How much of each good is consumed in France?

- How much of each good is consumed in the U.S.?

France Consumption With Trade



United States Consumption With Trade



Trade Makes Both Countries Better Off

France			
	consumption without trade	consumption with trade	gains from trade
computers	250	270	**20**
wine	2500	2700	**200**

United States			
	consumption without trade	consumption with trade	gains from trade
computers	120	130	**10**
wine	600	700	**100**

Where Do These Gains Come From?

- **Absolute advantage**: the ability to produce a good using fewer inputs than another producer

- France has an absolute advantage in wine
  - producing a barrel of wine uses 10 labor hours in France vs. 25 in the U.S.

- If each country has an absolute advantage in only one good and specializes in that good, then both countries can gain from trade.

Where Do These Gains Come From?

- Which country has an absolute advantage in computers?
- Producing one computer requires
  125 labor hours in the U.S but only 100 in France
- France has an absolute advantage in both goods!

Why do both countries gain from trade?

Two Measures of the Cost of a Good

- Two countries can gain from trade when each specializes in the good it produces at lowest cost.
- Absolute advantage measures the cost of a good in terms of the inputs required to produce it.
- Recall:
  An important measure of cost is *opportunity cost.*
- In our example, the opportunity cost of a computer is the amount of wine that could be produced using the labor needed to produce one computer.

Opportunity Cost and Comparative Advantage

- ***Comparative advantage:*** the ability to produce a good at a lower opportunity cost than another producer

- Which country has the comparative advantage in computers?

- To answer this, must determine the opportunity cost of a computer in each country.

Opportunity Cost and Comparative Advantage

- The opportunity cost of a computer is
  - **10 barrels of wine in France**, because producing one computer requires 100 labor hours,
    which instead could produce 10 barrels of wine
  - **5 barrels of wine in the U.S**., because producing one computer requires 125 labor hours,
    which instead could produce 5 barrels of wine.
- So, the United States has a comparative advantage in computers.
  Lesson: Absolute advantage is not necessary for comparative advantage!

Comparative Advantage and Gains from Trade

- Gains from trade arise from comparative advantage (differences in opportunity costs).

- When each country specializes in the good(s) in which it has a comparative advantage, total production in all countries is higher, the world's "economic pie" is bigger, and all countries can gain from trade.

Group Work: An Example on Absolute Advantage, Comparative Advantage and Gains from Trade

The next few slides have questions related to the information below.

Work out these problems in your groups and write down the answers

Argentina and Brazil each have 10 hours of labor per month.

In Argentina,

- producing one kilo of coffee requires 2 hours
- producing one case of wine requires 4 hours

In Brazil,

- producing one kilo of coffee requires 1 hour
- producing one case of wine requires 5 hours

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(1) Graph each country's Production Possibilities Frontier

(2) Which country has an absolute advantage in coffee?

(3) Which country has an absolute advantage in wine?

(4) What is Brazil's opportunity cost of producing one case of wine?

(5) What is Argentina's opportunity cost of producing one case of wine?

(6) Which country should specialize in and export wine?