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Q1. 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.

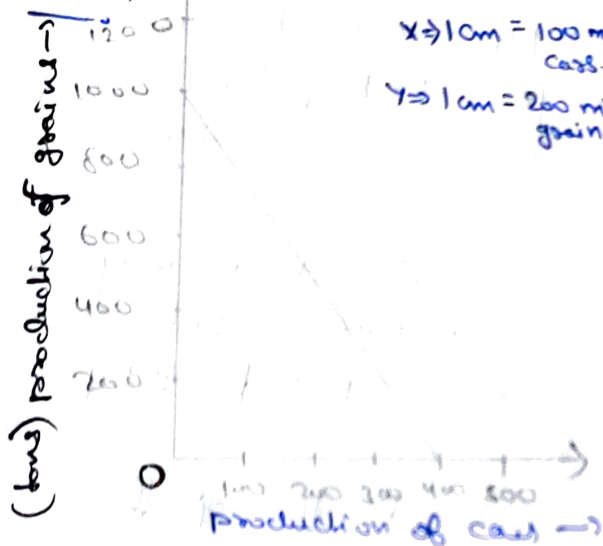
- Identify which country has an absolute advantage in producing cars? In producing grain? Which country has a comparative advantage in producing cars? In producing grain?
- Graph the production possibilities frontiers of the American and Japanese economies.
- Without trade, half of each country's workers produce cars & half produce grain. Find out what quantities of cars and grain does each country produce?

Ans. (a) Both countries American & Japanese worker can each produce 4 cars a year with same labour input. Thus, no one enjoys absolute advantage in producing cars. But when it comes to grain, American can produce 10 tons of grain per year whereas Japanese can do 5 tons of grain per year with same input. Thus, American workers enjoy absolute advantage in grain production.

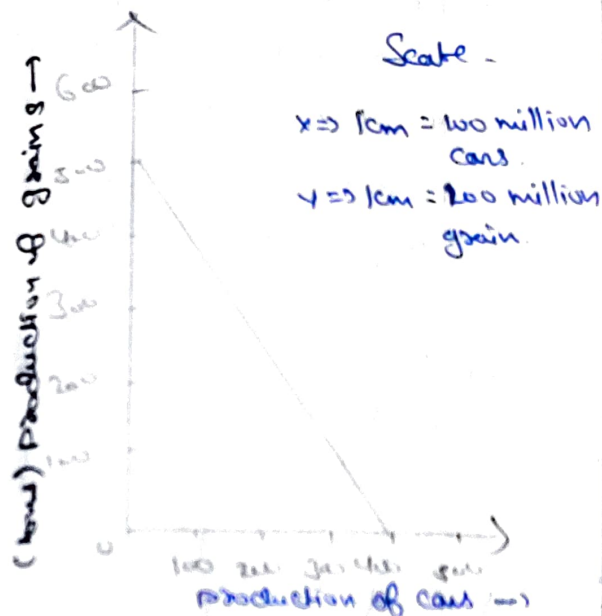
Country.	Output		Opportunity cost per unit	
	car	grain	car	grain.
USA	4	10	2.5	0.4
Japan	4	5	1.25	0.8

From table we observed Japan has comparative advantage in car production, and USA has comparative advantage in grain production over each other.

Ans(b)



American PPF



Japanese PPF

Ans(c)

In USA, without trade. 50 million^{workers} will produce car & 50 ~~million~~ million will produce grain. Same goes for Japan.

Country.	Without trade (per year)	
	Cars (50 million workers)	grain. (50 million workers)
USA	200 million	500 tons grain.
Japan.	200 million.	500 million tons grain.

Q2. Suppose that there are 10 millions workers in Canada and that each of these workers can produce either 2 cars or 30 bushels of wheat in a year.

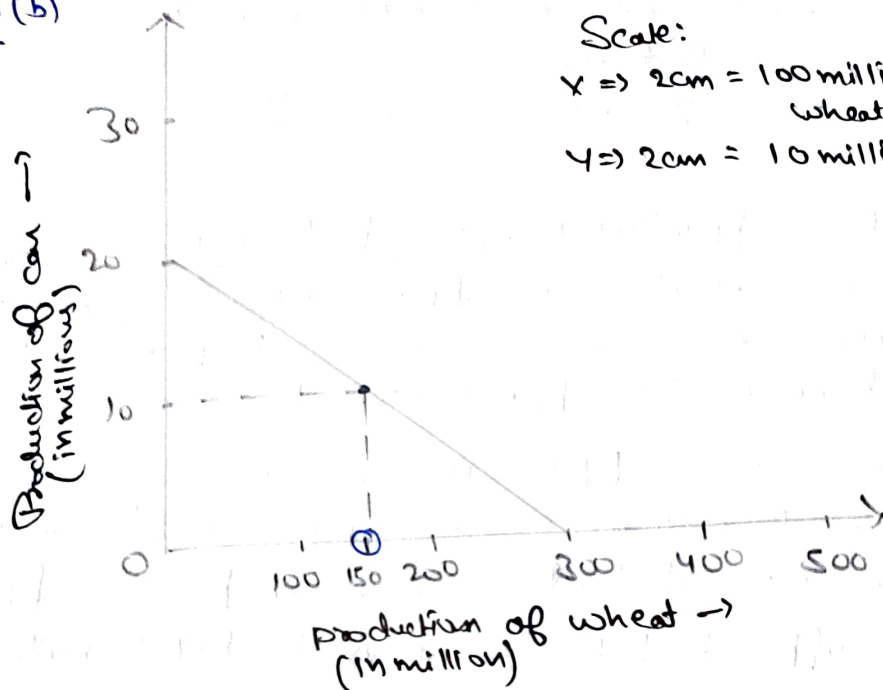
- (a) What is opportunity cost of producing a car in Canada? What is the opportunity cost of producing a bushel of wheat in Canada? Explain relationship between the opportunity costs of two goods.
- (b) Draw Canada's PPF. If Canada chooses to consume 10 million cars, how much wheat can it consume without trade? Label this point on PPF.
- (c) Now suppose that the US offers to buy 10 million cars from Canada in exchange for 20 bushels of wheat per car. If Canada continues to consume 10 million cars, find out how much wheat does this deal allow Canada to consume? Label this point on your diagram. Should Canada accept the deal?

Ans (a)

Country	Opportunity cost	
	car	bushels
Canada	$\frac{30}{2} = 15$	$\frac{2}{30} = 0.066$

Opportunity cost of 1 car is 15 bushels of wheat & opportunity cost of 1 bushel is $\frac{1}{15}$ cars. The opportunity costs of car & bushels of wheat are reciprocal of each other.

Ans (b)

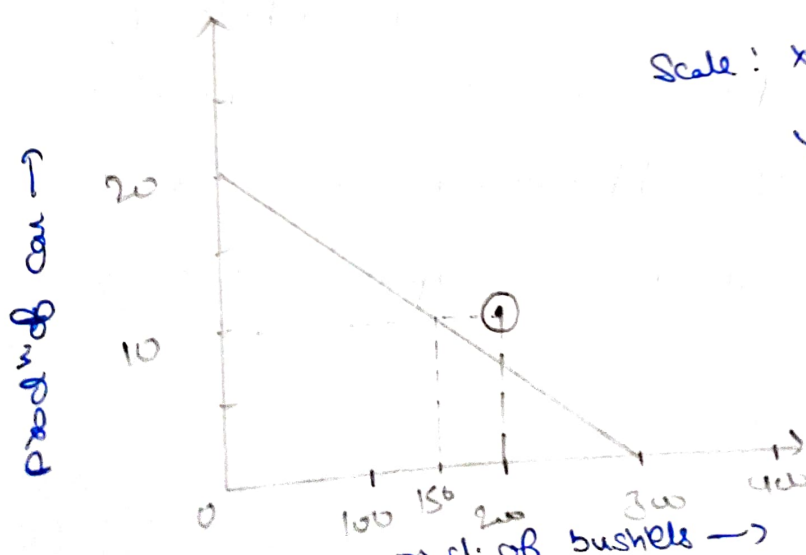


Scale:
 $x \Rightarrow 2\text{cm} = 100\text{ million bushels of wheat}$
 $y \Rightarrow 2\text{cm} = 10\text{ million of car}$

If Canada choose to consume 10 million cars, it will consume 150 million bushels of wheat.

Ans (c)

If Canada consumes 10 million cars & also US buys 10 million cars, Canada will make 20 million cars. If Canada ~~trade~~ gets 200 million bushels of wheat through trade along with the ~~its~~ its own 10 million car production. Yes Canada should trade as it is getting 50 million more bushels of wheat as gain.



Scale: $x: 2\text{cm} = 100\text{ million bushels}$
 $y: 2\text{cm} = 10\text{ million cars}$