1. Among the principles of economics was that of gains from trade—the mutual gains that individuals can achieve by specializing in doing different things and trading with one another--trade based on comparative advantage. Explain how Fred and Barney can raise their standard of living through trade.

In economics, David Ricardo is credited for the principle of comparative advantage to explain how it can be beneficial for two parties (countries, regions, individuals and so on) to trade if one has a lower relative cost of producing some good. What matters is not the absolute cost of production but the opportunity cost, which measures how much production of one good, is reduced to produce one more unit of the other good. Comparative advantage is a key economic concept in the study of free trade.

Under the principle of absolute advantage, developed by Adam Smith, one country can produce more output per unit of productive input than another. With comparative advantage, even if one country has an absolute advantage in every type of output, the disadvantaged country can benefit from specializing in and exporting the product(s) with the largest opportunity cost for the other country.

Fred has comparative advantage as a sport but has ability to play flute as well whereas Berny has comparative advantage in Piano and drum though he tries to be a sportsman as well. According to theory of Comparative advantage both of them can gain from the trade based on the fact that each one of them , then, can excel in the field they have comparative advantage.

Fred can then be an extremely good sportsman and Berny can be good percussionist.

2. Classify the effects of the following as: (a) a decrease/increase in the demand for fish, (b) a decrease/increase in the quantity of fish demanded, or (c) others.

1.1 The price of chicken falls, and as a result consumers buy more chicken and less fish.

1.2 The government of Japan bars fishermen from other nations from its waters.

1.3 People buy less fish because fish prices have risen

1.4 It is claimed that eat more fish and less red meat will lead to better health.

.

(1.1) (a) a decrease/increase in the demand for fish

(1.2) (c) others.

(1.3) (b) a decrease/increase in the quantity of fish demanded

(1.4) (c) others.

3. David enjoys diving and windsurfing. He obtains the following utility from each of these sports:

Hours per month	*Utility from diving*	*Utility from windsurfing*
1	*60*	*20*
2	*110*	*38*
3	*150*	*53*
4	*180*	*64*
5	*200*	*70*
6	*206*	*75*
7	*211*	*77*
8	*215*	*82*
9	*218*	*84*

David has $35 to spend. If the equipment for diving and windsurfing cost $10 per hour and $5 per hour respectively, how long will David choose to dive and to windsurf?

Hours per month	Utility from diving	Utility from windsurfing	Total Utility	Marginal Utility from diving(*)	Marginal Utility from windsurfing	Total Marginal Utility
1	U_{D_1} =60	20	80	60	60	120
2	U_{D_2} =110	38	148	MU_{D_2} = 50	18	68
3	150	53	203	40	15	55
4	180	64	244	30	11	41
5	200	70	270	20	6	26
6	206	75	281	6	5	11
7	211	77	288	5	2	7
8	215	82	297	4	5	9
9	218	84	302	3	2	5

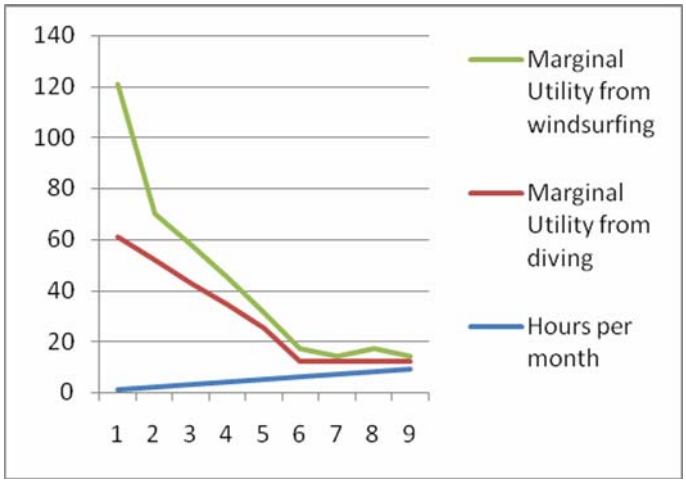
*[*Marginal Utility is difference in utility derived from the addition of 1 unit of consumption. That is, marginal utility of the second hour of diving will give David an addition of 50units of marginal utility (**Marginal utility derived from Diving =**MU_{D_2} **(utility derived from Diving in the 2nd hour- utility derived from Diving in the 1st hour) = (**U_{D_2} - U_{D_1}**) = (110 – 60) =50. Like-wise for windsurfing.**]*

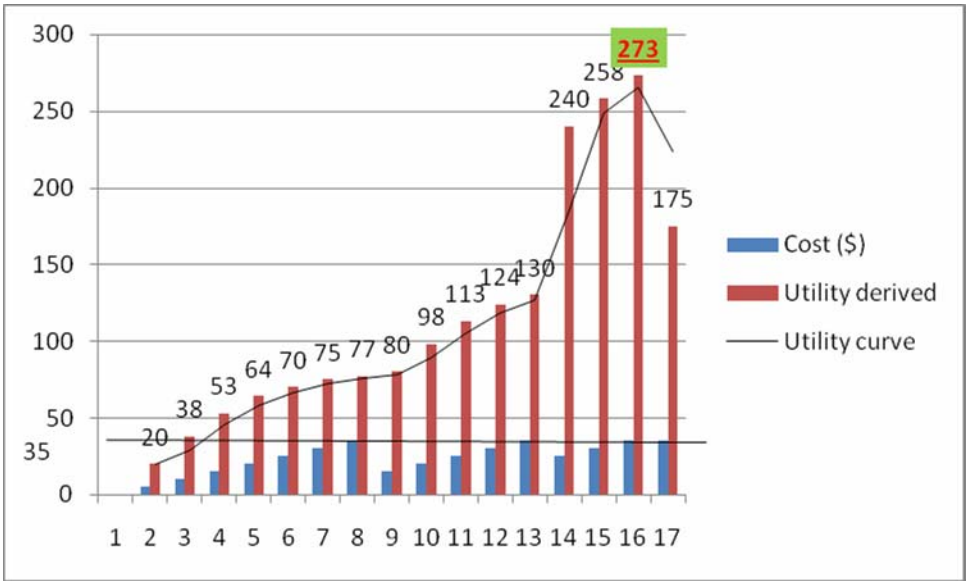
Time spent (in Hr's)		Cost ($)	Utility derived
Diving	Windsurfing		
0	1	5	20
	2	10	38
	3	15	53
	4	20	64
	5	25	70
	6	30	75
	7	35	77
1	1	15	80
	2	20	98

	3	25	113
	4	30	124
	5	35	130
2	1	25	240
	2	30	258
2	*3*	35	***273***
3	1	35	175

[The budget constraint for David is to maximize his utility subject to his budget constraint(Y=$35) = (PD x HD) + (PW x HW), where PD = Price/Cost of 1hour of diving, PW = Price/Cost of 1hour of wind-surfing; HD= hour spend on diving, HW= hour spend on wind-surfing;

Now, to maximize utility David will try to consume more and more hours of diving and surfing as consuming more will give him more utility, but he has a binding or constraint of budget which is given by $35 = ($10 x HD) + ($5 x HW). So, he has to satisfy this condition Please continue well. What we have shown in the table above is the possible combinations of consumption of diving and surfing so that it always satisfies the budget,$35. The maximum possible utility he can get is given by 2hr's of diving and 3Hr's of surfing as it will give him max. utility (=273)within his budget $35. He will not consider any other option given the fact that he will get lesser units of utility (<273).]





ANS: David will take 2 hr's of diving and 3 Hr's of Wind-surfing since the amount of utility derived from both the activity will be maximum considering the fact that utility is maximized subject to the budget constraint $35.

4. A carpenter quits his job at a furniture factory to open his own business. In his first two years of operation, his sales average $100,000 and his operating costs for wood, workshop and tools rental, utilities and miscellaneous expenses average $70,000. Now his old job at the furniture factory is again available.

Should he take it or remain in business for himself? Assume no other costs and describe how would you make this decision?

ANSWER: GIven the data it is clear that his on an average the carpenter makes a profit of $30,000 per year (=Average sales- Average cost=$1,00,000-$70,000).

The opportunity cost of the joining the job in the old factory is, therefore, should be in excess of $30,000 per annum such that he has incentive to join the old factory.

There is many more consideration to be taken into account: since he has established his own business he may not wish to leave the independent of it though the job at the factory may offer a higher wage than his average earning. Then his choice of working hours as well as leisure hours he wish to enjoy comes into reckoning.

So the final outcome of this situation may be more than one. But for the given scenario , the first solution seems to be the likely outcome.

5. Rationing was introduced in the UK in 1917 and in 1940. A number of different rationing systems were used:

Priority rationing entitled consumers to buy, through their holding of coupons, a fixed weekly amount of food. This system applied from 1940 to meat, bacon, sugar, fats and tea, and was extended to cheese, milk and eggs in 1941.

Other goods, however, were rationed under a points system, whereby each consumer received a number of points every four weeks to spend as desired. Each food, not under priority rationing, was given a points value, calculated so as to reflect the expected demand in relation to supply. Thus luxury goods such as canned salmon had high point's values, whereas cereals had low values. In June 1941, each individual was given 66 points per four week period which reflected 66 per cent of pre-war average consumption. Towards the end of the war, this fell to only 48 points per consumer.

The points system of rationing was also applied to other goods, such as footwear and clothing. A complete suit would have cost you a massive 32 points! Hence individuals, within the limits of not only their money income but also their point's income, were free to allocate their expenditure as they chose.

In conjunction with the more formal process of rationing, other foods and goods were subject to what was called controlled distribution. Milk, for example, went to priority consumers, such as mothers and children up to five years old, who were guaranteed seven pints per week. Seeing that supply was uncertain, once the guaranteed quota for priority consumers was distributed, the ordinary consumer got allocations as and when supplies allowed.

Question

Compare the three rationing methods of allocation with a market price allocation.

1. How are the decisions as to "what" is produced and "for whom" made in each case?

2. Why would the UK use rationing rather than let the market allocate?

3. Under which of the three rationing systems described above would price ceilings be necessary if high prices were to be avoided?

(1) In the priority rationing case, 'what' question is totally governed by the needs which gives highest utility to maximum number of individuals in the society, for a necessity, say milk. "For whom" question is governed by the fact that who is obtaining the maximum utility by consumption of a particular good.

The 'what' refers to some food articles (from 1940 to meat, bacon, sugar, fats and tea, and was extended to cheese, milk and eggs in 1941) and 'for whom' means anyone in the society.

In the points system, the process is subsidized where the bare necessary goods are prioritized and so called luxury goods are discouraged by putting higher points against them, thus discouraging their consumption.

The 'what' refers to necessity and luxury articles. Necessity is given a small 'point' value and 'luxury'given higher 'points' and for whom' means anyone in the society.

In the controlled distribution, this is a form of targeted distribution system, giving purchasing power to those who will derive the highest amount of utility from the products (say, from milk).'For whom' here is only the targeted group.

Here 'what' refers to the goods (viz. Milk) in the necessity segment and for 'whom' refers to the targeted people who need the commodity maximum (viz. children).

(2) Market is an institution where resources are allocated efficiently. But, a social planner may not be always interested in efficiency of the system. Efficiency means there is no waste, but social planner would always try to maximize collective utility. In doing that, if some recourses are allocated according to needs, rather than based on the "efficiency benchmark", then it could have arrived to a higher collective utility here, take the social planner to be government. Rationing is a way of such non-market allocation by govt (here the social planner), whereby the collective utility is maximized rather than a market allocation. It is allocation on the basis of needs rather than purchasing power.

[The market uses the forces of demand and supply to determine the prices and availability of goods and commodities; they may be necessity or may be luxury. But government, being a social planner has social welfare in it's' mind and hence cannot allow the market to operate freely.]

(3) In the first case, since all the commodities are given free of cost through priority rationing, hence there is very les chance of price rise and less need for price-ceiling. In the second case as well, chances of price rise is lesser since the products are being made available, albeit through a points system but in the third case, the supply is lesser in the market since the demand of selected targeted groups have to be satisfied first then the rest of the available commodity, if any, is made available to the market. Thus in this case the demand of the market is least satisfied and hence here the chances of a price rise is maximum among the three systems and as such chances of inflation looms large. Thus, in this market, the requirement of price ceiling will be the maximum.

6. The current price of copper is at an all time high. Imagine that a vast deposit of high grade copper is discovered near a small village in the heart of the countryside. Construction will require new buildings at the mine, new roads to the mine and land will have to be excavated and shafts sunk. Construction will require construction materials and construction workers (requiring accommodations) on a temporary basis during the construction phase. Once construction is complete permanent mining operations can begin. Mine workers will be required. Unlike the construction workers, they will require permanent accommodation.

Questions

Trace through how the economy responds during both the construction phase:

What will happen to rents in the village during construction?

Will the demand for other village goods and services increase? How will the village shops respond?

What will occur to encourage local village people to work at the mine once production is ready to begin?

Will the village work force increase? Where will the workers come from (e.g., local?) Why would they work at the mine?

What will happen to other wages and prices in the village?

(1) Since a new reserve of copper if discovered, which is of high grade, the economy of the village is going to boom due to mining activity in the very near future. Initially, in the short run, the rent will increase due to influx of un-skilled to semi-skilled labour to work in the infrastructure projects until the new buildings come up as there is a dearth of accommodations.

But after the residence complexes would be build the availability of accommodation will increase and the rent will come down.

Again it may go up when the Mine workers will come to stay there, if the available accommodation is not sufficient enough for all of them.

(2) The demand for the village goods and services will go up considerably. Since the demand will be higher due to the presence of mining workers, temporary and permanent. In fact, the village shops will have the opportunity to expand their businesses due to high demand for commodities and services.

The rural economy will get a boost-up. But there can be potential threats from outside competition as big players like Wal-mart can jump in seeing the opportunity and this may hurt the rural entrepreneurs'.

(3) the availability of work at the mine with a good salary will encourage the villagers to go to work at the mines instead of their old work, cultivation. But the skill development issue will be a big factor and if we can assume that the mining company is ready to train the local work force then this can be encouragement for the villagers to join work.

(4) The village work force will increase since with every big industry in the capital sector will usher in the development of many a subsidiary industries which will generate more employment.

The village workforce will increase. At the same time, please note that there will be influx from the nearby villages. As well as the village where the mine is. Due to the fact that employment opportunity will be higher here, at the mines with relatively better wages than agricultural sectors.

In villages disguised employment is always an impediment. And as such the real wages are quite low. So there exists a chance to relocate to not only mining sector but also to anything related to it. An even new field that comes hand in glove with this kind of heavy industry will also generate employment.

(5) As there will be an exodus from the agricultural sector and to the other sectors wages will definitely go up. The extend may not be very easy to calculate but prices will also go up since the money supply would surely go up as the mines start working.

7. Over the last 40 years or so, there have been large increases in yields from grasslands. This has been largely due to huge increases in the use of nitrogen fertiliser. In England and Wales this has risen over the period from around 10 kilograms per hectare to over 100. Some farmers use considerably more.

In 1976, J. Morrison and M. V. Jackson reported on experiments to show the effects on grass yields of different amounts of nitrogen fertiliser. The experiments were conducted over a four year period on a number of different sites up and down the country. The findings from three of the sites are shown in the following table. If the soil has a high natural level of nitrogen, the effects of adding nitrogen fertiliser will be more limited.

	Nitrogen fertilizer applied: kg/ha/year						*Mean rainfall May–Aug (mm)*
Nitrogen fertilizer applied: kg/ha/year	*0*	*150*	*300*	*450*	*600*	*750*	
Cambridge	*1.3*	*3.4*	*5.6*	*6.1*	*6.1*	*5.9*	*175*
Gleadthorpe, Nottingham	*0.7*	*4.8*	*9*	*10.7*	*11.1*	*10.9*	*252*
South-west Wales	*3.2*	*7.3*	*11.1*	*13.2*	*14.1*	*13.6*	*311*

Questions

1. Draw the TPP and MPP curves for the three sites in the table.

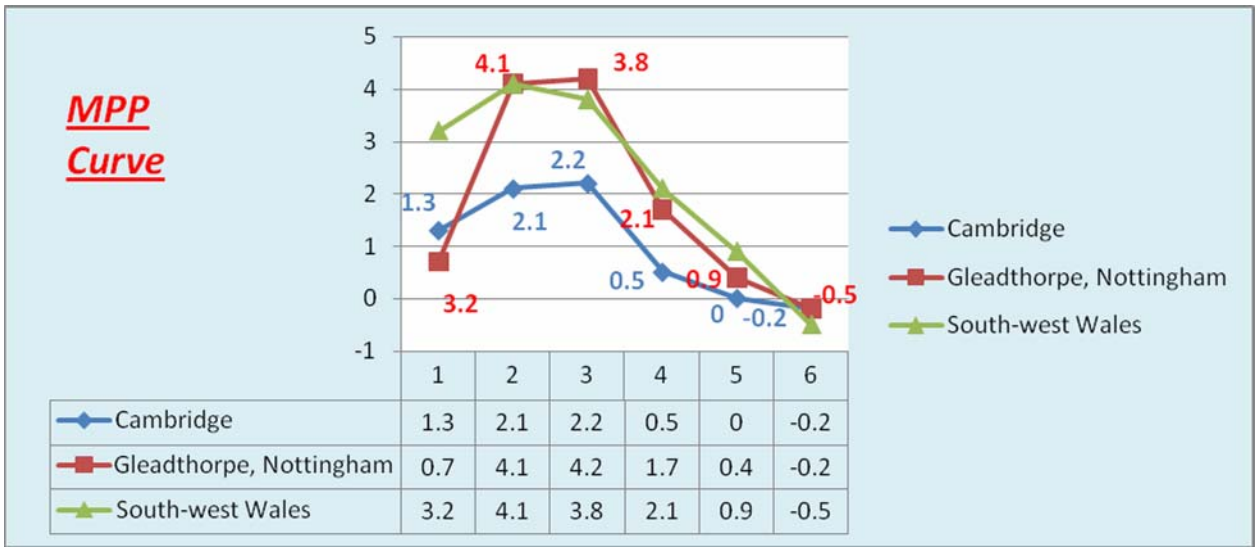
2. Rainfall and the amount of nitrogen naturally occurring in the soil will cause differences in the position of the TPP curve between sites. One will cause vertical differences in the curves and one will cause horizontal differences. Explain which one causes which effect (and why).

3. Apart from figures on yields, what else will a farmer need to know before deciding whether to use 600 kg/ha of nitrogen fertiliser?

Solution: 1.

(1)	Total Physical Product	Marginal Physical Product

Nitrogen fertilizer applied: kg/ha/year	Cambridge	Gleadthorpe, Nottingham	South-west Wales	Cambridge	Gleadthorpe, Nottingham	South-west Wales
0	1.3	0.7	3.2	1.3	0.7	3.2
150	3.4	4.8	7.3	2.1	4.1	4.1
300	5.6	9	11.1	2.2	4.2	3.8
450	6.1	10.7	13.2	0.5	1.7	2.1
600	6.1	11.1	14.1	0	0.4	0.9
750	5.9	10.9	13.6	-0.2	-0.2	-0.5



(2) Rainfall causes vertical differences as it causes the differences in yield across the sites.

The horizontal differences are caused by the effect of nitrogenous fertilizes as it increases the yield of one particular place.

(3) Apart from figures on yields the farmer needs to know the natural level of Nitrogen of his land as the increase in yield depends on the availability of natural nitrogen in soil of that region.