Management Accounting
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Lecture- 49
Applications of Marginal Costing- II

Welcome students, so in these classes we are in the process of learning about the different applications of the marginal costing where the marginal costing can be used as a tool of the management decision making. So, we did two, three problems in the previous class and I will take you forward with the some other problems and say, share with you and then say make you understand that how means this concept of costing can be used.

As a very, very important decision making tool in some other areas also and say, what are the other applications of this concept of the marginal costing? Right. So, in this case now this problem which we are doing is or we are going to discuss here is that is the evaluation of the performance. Now, (it) evaluation of the performance can be in any sense for example, let us say, evaluation of the performance of a product or a division, section, subsection of the company or maybe say, different markets, segment of the markets, right.

So, if the company is manufacturing different products, it may not be means all the time possible that all the products are profit making or they are contributing to the profits of the firm and it is also not sure that all the (profit) products are giving your adding of the same amount of the profit that is also not means required to be there. There could be some products who are profit making, there could be some product who are marginally profit making, there are some products who could be loss making but we can convert them into the profit making products after taking necessary steps.

So, if you have to evaluate the performance of the different products you are manufacturing, so that the products which are giving the high amount of the profits or high amount of the contribution towards the fixed expenses and profit they can be strengthen, they can be improve further and the products which are little weak, we have to evaluate that whether they should be strengthen or they should be dropped, right.

So, evaluation of the performance of the different products here, I am going to discuss with you and in this case, we have to understand that if the company is manufacturing different products and they have different means concepts in their mind or notion in the mind that if

you look at this data which is given in this problem with your naked eye is or without any kind of analysis you may easily find out that.

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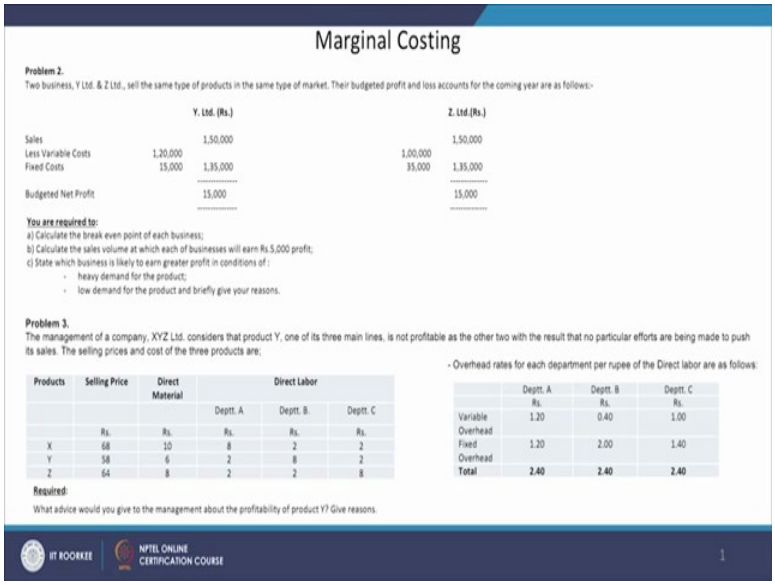

Any of the product out of these three may not be profitable or one may be profitable but if you do the analysis with the help of the this concept of marginal costing then you will know the real picture. So, what is given the problem here is, the management of company, of a company considers that product Y, one of the it is three main lines is not profitable as the other two with the result, that no particular efforts are being made to push it is sales, the selling prices and cost of three products are given to us.

So, these three products are here X, Y and Z, selling prices also give to us, material cost is also given to us, labour cost is also given to us and the other direct overheads cost is also given to us. On the basis of this, we have to evaluate the performance of these three products X, Y and Z and then we have to conclude whether the say, notion of the management is right, there is the product Y is less profitable as compare to product X and Z or not.

So, let us means understand this problem and let us do some analysis and if you do some analysis, what you have to do is? You have to prepare a comparative profitability statement of these three products.

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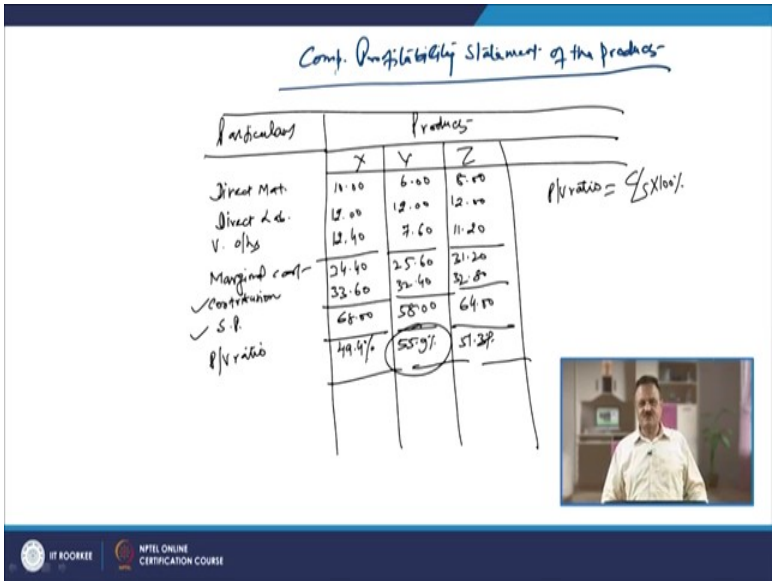

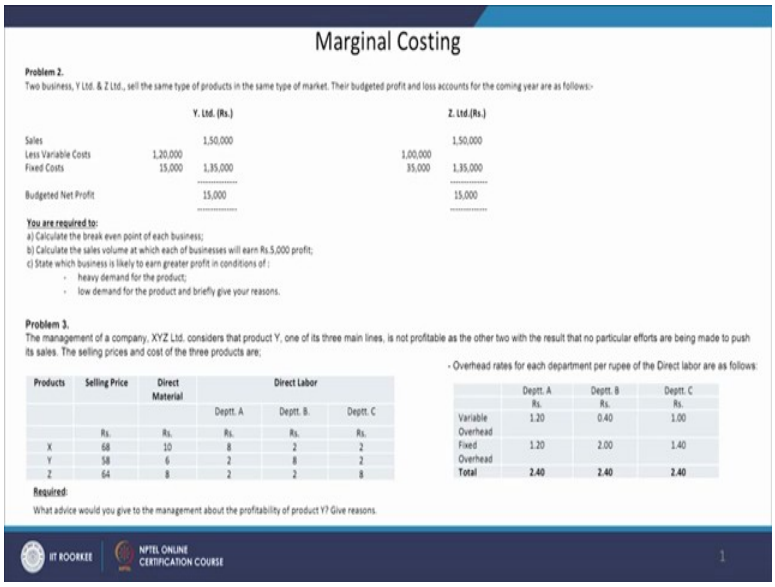

So, it is the comparative profitability statement of the products, (of the products) comparative profitability statement of the products. So, if you prepare this statement, you will come to know that how these products are means performing and what is a real picture in the, real scenario and here we have different columns, we have to create a profitability statement for the three products, right and here we have to put the products, right.

So, you can say here that, this is something like you can call it as column where you can put the particulars, right then you can put the products here, particulars and products and then you have to put the products here, X, Y and Z, right. Now, we have to prepare the statement and see when you are talking about the judging about the profitability of a product then we

should try to calculate something which can explain the profit potential of the product and or any of the products.

So, P/V ratio, profit to volume ratio is the one technique, a sub technique of the marginal costing that can be used here and then we can on the basis of the P/V ratio of these three products we can decide, we can conclude that what is the real situation in this organization and this company and apprehension of the management with regard to the product Y is correct or not, right because profit to volume ratio.

At currently what they are they doing is, they are thinking there is a profit product Y is not profitable, so why to push it is a sales but if it is possible, if it is found out that there is a positive profit to volume relationship between in this product Y as compare to product X and Z then we can suggest to the management that it is not the case that Y is not profitable, it is not profitable at the current level of the production or maybe current level of the performance but if you look at the profit to volume ratio if it is found better than the other two then we can say the movement the volume of the production goes up, profit is also expected to go up.

So, there is no need to means drop the product or not to make any kind of efforts or to do anything which is undesirable, we should strengthen the product Y also and if you increases the sales of this product in the market certainly we are going to have the better profitability overall profitability of the firm because X and Z are already profitable, Y if he has a potential then also it can be strengthen, the overall profitability can be improved.

So, what we have to calculate here is? If you have to calculate the profit to volume ratio then you have to first calculate the contribution because profit to volume ratio requires contribution and sales information. So, let us calculate first, the contribution and here in case of the, this contribution first we write here, direct material and what is the direct material cost? It is already given to us, if you look back here, direct material cost is given to us in case of all the products and this cost is a 10, 6 and 8 rupees, this cost is 10 this is in the products and this amount is in rupees, so it is 10, 6 and 8 rupees, (theek hai) this is direct material cost, right.

Then we go for the, second component is that is the direct labour cost and the direct labour cost here is that, what is the direct labour cost? It is given to use here and the direct labour is that is a given at the department wise, there might be different departments A, B and C. So, if you total it up because processing maybe being done in the three departments, department A,

department B and department C to give shape to the products, all these products, so the total cost, labour cost becomes as 8 plus 2 plus 2 is 10, sorry 12 here it is again 12 then it is again 12, right.

So, in all the three products cases the labour cost is 12. So, we put here the labour cost is 12, this is the labour cost which is 12, right. Now, we take the third component that is the variable overheads, variable overheads now here something different is given about the variable overheads, overhead rates for each department per rupee of the direct labour are as follows, overhead rates for each department per rupee of the direct labour are as follows, we have to calculate these because I told you many times that overhead are always studied in the relation to either material or labour.

In this case it is stated in relation to the labour and we are again given three departments A, B and C and variable overheads in the fixed overheads information is available with us but since we are using the concept of marginal costing, so we will care about the variable overheads only. So, it means now we have to take it as in relation to the labour, so labour rupees 8 in department A and overheads are 1.20 in department A.

So, what you have to do is? You have to multiply 8 by 1.20 and that works out as, how much? That works out as the total amount of this, overheads is going to be in one case, how much is going to be? If you look at this part, it is 8 multiply 1.2 because it is the 1.2, 1 rupee of the labour is equal to the 1.2 rupees of the overheads in the department A, so this 8 multiply 1.2 becomes 9.6 then is the second one is 0.40 and multiplied by 2 rupees of the labour, so it is 0.80 and in the third case it is rupees 2 and multiplied by 1, so it is 2 rupees in the third case.

So, it means the total amount which comes out here as 9.6 plus 0.80 and then it is say 1, so the total overhead cost becomes how much? It is 12.4. Then in the second case same way you have to do it and if you calculate it, it works out as 7.6 or something like that 7.60 and then in the third case it works as 11.20, third case it works out as 11.20. So, I think these are the three important things which have to be taken into account.

And we now calculate the marginal cost, marginal cost and if you calculate the marginal cost here, how much it comes up as? 10 plus 12, 22 plus 24, 34.34, this is total is (34.34) 34.40. Then in the second case it works out as 25.60 and in the next case it works out as 31.20, right this is the marginal cost. Now, you have to calculate the contribution, so we put here the

contribution, we write here contribution and to calculate the contribution you need the selling price information.

So, we will call here as the, what is the selling price? selling price we are given here as, if you look at the selling price it is given to us as, selling price for the X is 68, for Y is 58 and for the Z is 64. So, selling price we are putting here as that is the total amount of 68, then in the second case we are putting it as 58 and in the third case we are putting here it as 64, right. So, now you can find out the contribution, so what is the contribution here? Selling price minus marginal cost, so it is 68 minus 34.40 is 33.60, second is the next case is the 32.40 and next is 32.80.

So, this is a contribution we are found out, 33.60, 32.40 and 32.80 is the contribution by taking into account the selling price. So, this information we required contribution, we have already selling price with us and what is the formula for the P/V ratio? P/V ratio is equal to contribution divided by sales. So, using this formula you can find out the profit to volume ratio, profit to volume ratio of the three products and if you calculate the profit to volume ratio, how can you calculate is? Contribution divided by sales multiply 100 if you want to calculate in the percentage terms.

So, if you calculate in this case dividing the 33.60 by 68, so the contribution P/V ratio comes up as, how much? P/V ratio is 49.4 percent, right. In the second case, if you work out as 55.9 percent and in the third case this works out as 51.3 percent, right. So, this is enough for doing this analysis, this type of the information, this much of information is enough?

And now we have to look at it, there whether the product Y is less profitable or not as it was being concluded the firm and if it is less profitable then certainly do not make any effort to improve the sales but if it is not less profitable as compare to the others two or maybe it is at par profitable with the others two then total effort should be made to say improve the overall P/V ratio of the firm.

So, if you look at these P/V ratios now, we have the P/V ratio which is the lowest for the product X that is 49.4 percent, we have the P/V ratio which is highest for the product Y 55.9 percent and we have the P/V ratio Z for the product Z which is 51.3 percent, right. Now, we were saying that the product Y is less profitable and it should be either dropped or no efforts are being made but now you look at after doing this analysis you have come to know that P/V ratio is the highest in case of the product Y.

So, the indication here is that profit to volume relationship of this product is very, very good and the movement you increase the volume of the production and sales of the product Y certainly the profit is going to increase, certainly the profit is going to increase. So, there is no need to not to make any kind of the efforts for the product Y rather maximum effort should be made to improve or encourage the sales of product Y and to say strengthen the performance of the product Y because it has the largest profit making potential, it has the largest profit making potential in the firm.

And out of these three products I think if it is strengthen then the product Y can give you the maximum say contribution towards the profitability, maximum contribution towards the profitability because profit to volume ratio is 55.9 percent in case of the product Y. So, you can understand here, the difference between the two information, the information which is without any kind of analysis available with us and information which is available with us with any kind of analysis then after this analysis picture emerges is totally a different picture as compare to the picture which is before.

So, here you have to understand, what the data is given, what are the different techniques in the marginal costing available with us, which technique can best we use in the, say analyzing the performance of these products or departments and then finally how to arrive at a very logical conclusion or the decision, right. So, this is the comparative profitability statement of the products, three products and we are found out that the profit to volume ratio of the product Y is the highest, so the management is on the wrong path and every effort should be made to strengthen the performance of the product Y, right.

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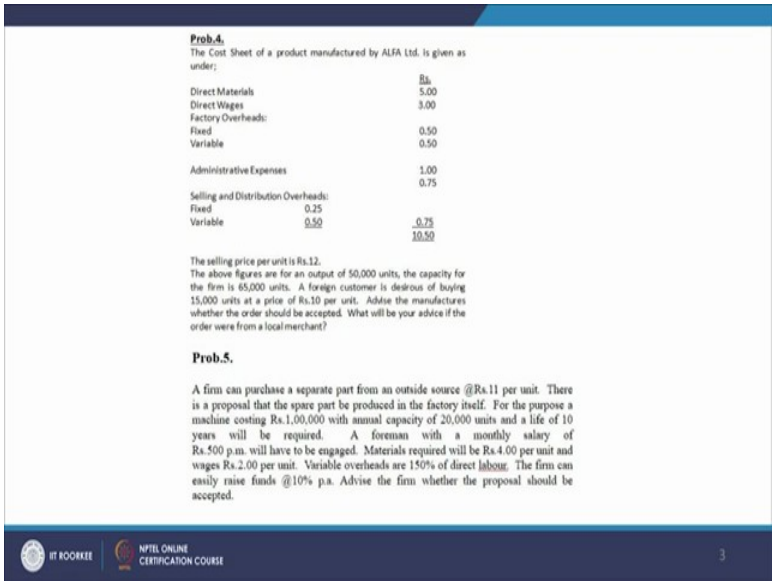

Now, we will move to the next problem and one more problem we will do in this class. Accepting or rejecting an order form a foreign buyer, accepting and rejecting an order form a foreign buyer. So, here now, we are given here as the cost sheet of the product manufactured by Alfa Ltd. is given to here as under, this is the cost sheet of this product, given to us is the this much.

You are given here the information with regard to the material and labour, material cost is 5 rupees per unit and the labour cost is direct wage cost is 3 rupees per unit, (factory overheads are) fixed overheads are 0.50 and variable overheads are 0.50, so total overheads are 1 rupee per unit, administrative expenses which are generally fixed in nature, they are 0.75, selling and distribution overheads are given to us as partly they are fixed and partly they are a variable, the fixed overheads are 0.25 and variable overheads are 0.50, so total selling and distribution overheads becomes 0.75.

So, if you look at the total cost of this production then here it works out as 10.50 and the selling price is that is the selling price per unit is rupees 12. Now, the further information given to us is, the above figures are for an output of 50,000 units, the above figures are for an output of the 50,000 units, the capacity for the firm is to manufacture 65,000 units, the firm can a manufacture 65,000 units without incurring any kind of the extra fixed cost, a foreign customer is desire is as of buying 15,000 units.

A foreign customer is desire is of buying 15,000 units at a price of rupees 10 per unit, at a price of rupees 10 per unit. Advice the manufacturers whether the order should accepted or

not? Means, we are manufacturing 50,000 units, we can manufactured without adding any fixed cost, extra fixed cost 65,000 units, so additional production possible is 15,000 units and for the same number of units, there is a foreign customer desire is as of buying these additional 15,000 units.

It is not regular production and sales in the local market, once in a while there is a foreign order and we have the extra capacity also because in the local market, we are only exhausting the 50,000 units, capacity, so we have these capacity also, this order is coming once in a while, so what will be your advice with the order is from the local merchant? So, it means advice, we have to advice here two things, advice of manufacturer whether the order should be accepted or not, there is an order from the foreign buyer and at say, what amount? 10 rupees per unit he is ready to buy 15,000 units and that is once for all.

And second thing we have to work out is what will be your advice if the order from the local is from the local merchant, right. So, if you talk about this analysis, we can easily make analysis from this information and on the basis of the analysis made in this information we can conclude something logical or something useful here for us. So, what you have to do is that, we have to now calculate the marginal cost for the additional 15,000 units, marginal cost for the additional 15,000 units.

So, now here I would tell you that see when we calculate the cost of production for any product, we have two kinds of the cost, variable cost, marginal cost and the fixed cost, right. In this case, it is clearly given that the plant capacity is 65,000 units and no further fixed cost is required, whether you use this additional capacity of the 15,000 units or you do not use it, you are free.

But if you use it then it may be further addition in the profitability because fixed expenses are already met from the contribution coming up from the 50,000 units, there is no need means already the contribution is sufficient and that is meting the fixed cost by even manufacturing and selling 50,000 units but additional if we manufacture the 15,000 units to fulfill the requirement of the foreign buyer then we have to incur only the marginal cost or the variable cost, that is on account of the material labour and the variable overheads, no fixed cost is required to be incurred.

So, in this case let us see, we will make the, we will calculate the marginal cost for additional 15,000 units, marginal cost for additional 15,000 units, marginal cost for additional 15,000 units.

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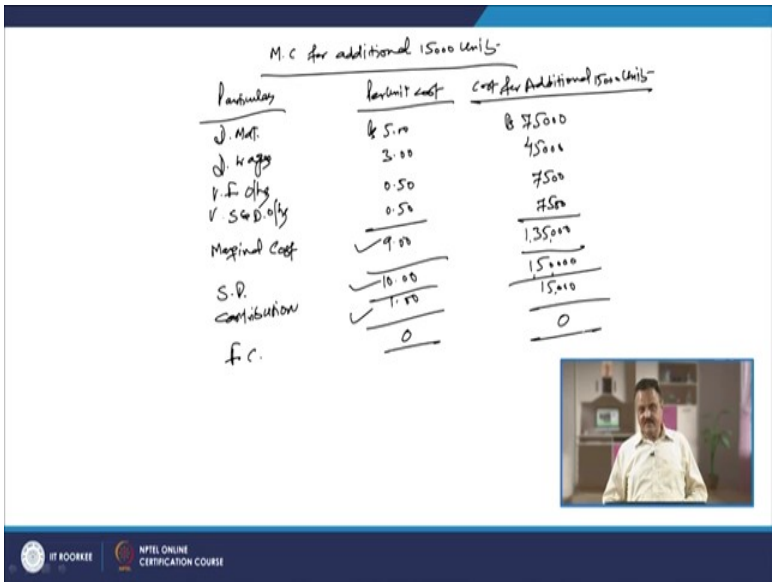

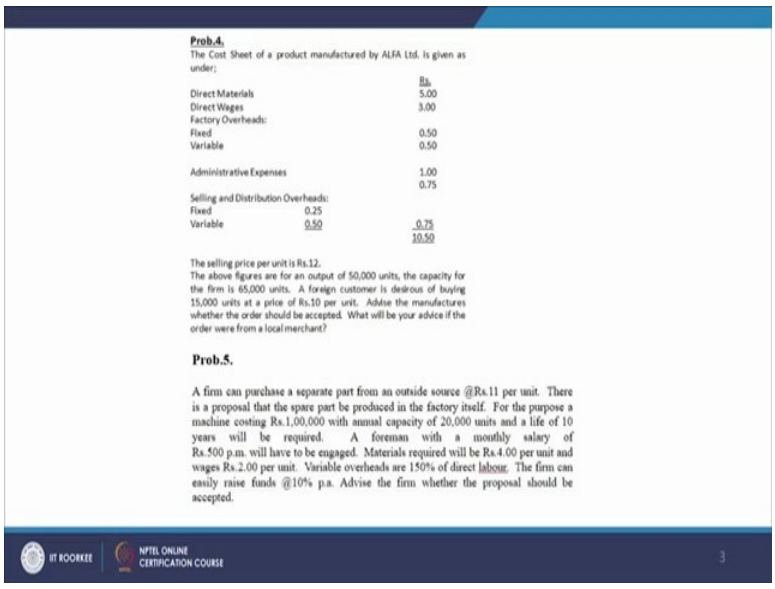

So, this is the evaluation we are going to do, marginal cost for additional 15,000 units and if you calculate here, so we have to again prepare a statement where you can have three things, one is the particulars then you can have the cost per unit, per unit cost and then is the cost for additional 15,000 units, cost for additional 15,000 units, particulars, per unit cost, cost for additional 15,000 units, right.

So, we are writing here particulars, direct material, direct material and if you take the direct material cost which is given to us, what is the direct material cost? It is the 5 rupees and

direct labour is 3 rupees. So, it is per unit cost is 5 and for the 15,000 units is this how much? Rupees 75,000. Similarly, we take the direct wages, we take the direct wages and if you take the direct wages, the cost here is that is how much? 3 rupees per unit and for the 15,000 units is 45,000, 15,000 units is 45,000 that is a direct wages cost and I think there is no other overhead cost given here, ok.

We will have to take the overhead cost also, overhead cost is given to us that is the factory overheads are fixed and variable overheads, so we are have to take this into account. So, in this case, factory variable overheads, variable factory overheads if you take these variable factory overheads, so how much is the variable factory overheads? We have to calculate this amount and this amount is given to us is rupees 0.50 per unit and for this amount it is given to us as, how much? This amount is given to us 7,500.

Then is the fixed overhead, which are sorry, variable overheads and they are selling and distribution, variable selling and distribution overheads, variable selling and distribution overheads. So, we have to total added up also overheads, so variable selling and distribution overheads here, so if you take the variable selling and distribution overheads again it is 0.50 and this amount is again 7,500 rupees.

Now, we have to calculate the marginal cost. This is the total, sum total of the marginal cost, so what is the marginal cost here? Marginal cost, if you calculate here from this information then this marginal cost, is marginal cost how much is the marginal cost? It is 9 rupees, this if you total it up, this works as 9 rupees and for this total number of 15,000 unit, it is 1,35,000 rupees, 1,35,000 rupees is the marginal cost for the production of the additional 15,000 units, right.

Now, we talk about the selling price. What is the selling price? Normal selling price in the domestic market is 12 rupees but the foreign buyer is asking or is offering the price of how much? 10 rupees per unit, so this is the 10 rupees per unit price and if you take this amount then we are going to get the additional amount of how much? 1,50,000. So, in this case selling price 10 rupees and the total sales value will be 1,50,000 rupees, so what is the contribution?

The total amount of the contribution is total amount of the contribution is how much? It is 1 rupee and here you call it as how much 15,000 rupees, here you call it as 15,000 rupees, 1 rupee and 15,000 rupees, so this is the contribution amount. So, now the margin cost is 9

rupees, selling price offered by the foreign buyer is 10 rupees and we are having the contribution of 1 rupee and when you talk about the fixed cost for the additional production of these 15,000 units, this amount is 0 or you can call it as nil because plant capacity is already nothing, no fixed cost.

So, because the plant capacity is already that much, that additional 15,000 units can easily be manufactured, right. Now, in this case what we have to decide and what decision we have to take here by looking at this information or by taking the help of this information what we can do. See, if we manufacture the product, additional 15,000 units to fulfill the demand or the order from the foreign buyer, what is our total additional marginal cost? That is 9 rupees per unit and how much price he is offering? 10 rupees per unit.

So, still we are have the possibility of earning the contribution by 1 rupee and since the fixed cost is already met, fixed cost is 0 here. So, whatever the additional contribution we earned by selling this 15,000 units to the foreign buyer that still we are adds to the profitability by the same amount. So, it means now, from this 15,000 units 1 rupee we are earning, so it means we are earning 15,000 rupees contribution and that 15,000 contribution is because of the fixed cost being 0 is going to state by add up to the profitability of the firm.

So, what should we do? Should we accept the order or we should not accept the order? So, the problem comes here that normal selling price which we are getting in the local market is we are already selling the product for 12 rupees per unit in the market and if we sell this product now only once in a while customer, this foreign buyer is not a regular customer, regular customers are the customers in the local market.

So, if this once in a while foreign buyer if he is being served and being sold the production at 10 rupees per unit as against the 12 rupees we are already selling in the local market, so what impact it will have? Will not be means causing as the loss of the local market that people will see, say entice deceive that, we are buying it from you for the 12 rupees for the past so many years, that is the 50,000 units and you are selling at 10 rupees with the another buyer who is a once in a while, buyer of your product whose not a regular buyer, so why this discrimination is there.

So, question is whether you should accept this foreign order or not? I would say, yes we should accept this foreign order because it is giving us the additional profitability of the 15,000 rupees. Since it is a order from the foreign buyer, this news is not going to spread in

the local market that one buyer who bought 15,000 units once for all is a supplied the product at rupees 10 per unit as against the 12 rupees to all of us the local buyers.

Since he is a foreign buyer, we are manufacturing that production and straight way sending a consignment to that foreign buyer and no news is going to spread in the local market at what price we have sold to the foreign buyer, no news is going to spread in the local market that at what price we have sold to the foreign buyer.

So, it means if it is possible that without incurring any fixed cost extra and it is possible to recover the variable cost from the additional production because if you manufacture additional 15,000 units only variable cost is going to be there, marginal cost is going to be there and that is 9 rupees he is offering at 10 rupees to buy your 10 rupees we have the state by contribution of the 1 rupee and that is state by adding to your profitability.

As far as this order is concerned, it is from the foreign buyer, so it is not going to impact your local market, so if the order is the foreign buyer and the fixed cost is already met, so if it is possible to manufacture extra number of units within the given plant capacity and to add the profitability into the profitability of the firm in that case we should accept these orders because they are once in a while therefore the foreign buyers, no news is going to spread in the local market, so there is no harm manufacturing and selling.

What effect is? They had the order we inform the local buyers, you should not have been accepted in any case at any cost in any terms because it will spoil your existing customers or the existing market because if the news spreads in the market that to the one customer once in a while customer in the local market the product has been sold for say 10 rupees and to other customers they are selling or buying 50,000 units there being sold at 12 rupees then the company may lose of 50,000 units huge market.

So, that mistake there, blunder should not be done but since this order is from the foreign buyer, so it can be done because there is no news going to spread to the in the local market and this order is once in a while and we are getting the opportunity to use the extra plant capacity and earn the extra contribution and the extra profitability, right. So, this way we can take the decision here, in this kind of the concepts and this kind of the processes.

So, how we can use, the cost of concept of the marginal costing in say fixing the selling price in case or accepting the orders from the buyers who are from not from the local market, it is from the foreign markets this way we can take the decision and we can calculate the

contribution and then we can calculate the profit potential of that order and if it means the news is positive, if the analysis says it is positive then why not to accept it, right.

So, this is a one more application of the marginal costing. After that we will do, one more, one or two more application of the marginal costing. In the other two problems, if you look at these two problems we have got here some two problems where we will learn about the make or buy decision we will take and the next thing we will take a decision with regard to the key or limiting factor, right.

So, what is a make or buy, how to take this decision, what is a key or limiting factor, how to take these decisions with the help of marginal costing, we are going to discuss in the next class. Thank you very much!