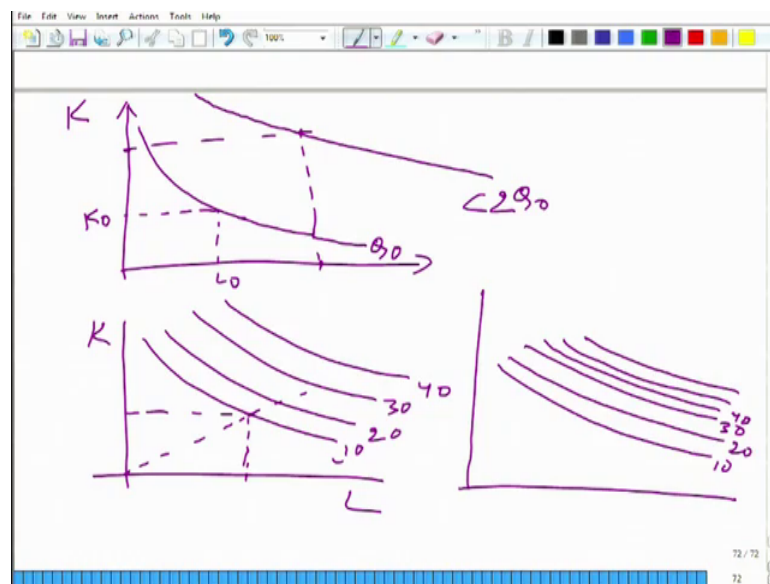


An Introduction to Microeconomics
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Lecture – 91
Returns to Scale through Graphs

Now, as we are talking about graphs, let us use these graphs to also understand constant returns to scale, increasing return to scale and decreasing returns to scale.

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Here we have again we are drawing isoquant on y axis, we have K and on x axis we have L and here we have one isoquant fine. And let us say we take this particular or let me say let me take another we are taking this particular combination of L naught labour and capital. Now if we double the amount of labour means let us say roughly we are here, and we double the amount of capital we are here. So, what we will get? We will have another isoquant passing through this point and if it is constant returns to scale what we are going to get this is Q naught, then we are going to get here as.

Student: 2 Q naught.

Two Q naught and if it is increasing returns to scale, then what we will get?

Student: Greater than Q naught.

Greater than $2Q$ and if it is decreasing returns to scale then it will be less than $2Q$. So, in other words if we can say this that, when we have constant returns to scale and we are drawing isoquant with the equal you know the equal difference is like 10, 20, 30, 40 ok. If this is the case again the pictures are not that nice, but if this is the case for let us say constant return to scale, what we will get in the increasing return to scale that, isoquant will become nearer for the same value 10, 20, 30, 40 they will become nearer and nearer why? Because if we double all the inputs then.

Student: Greater.

Output will more than.

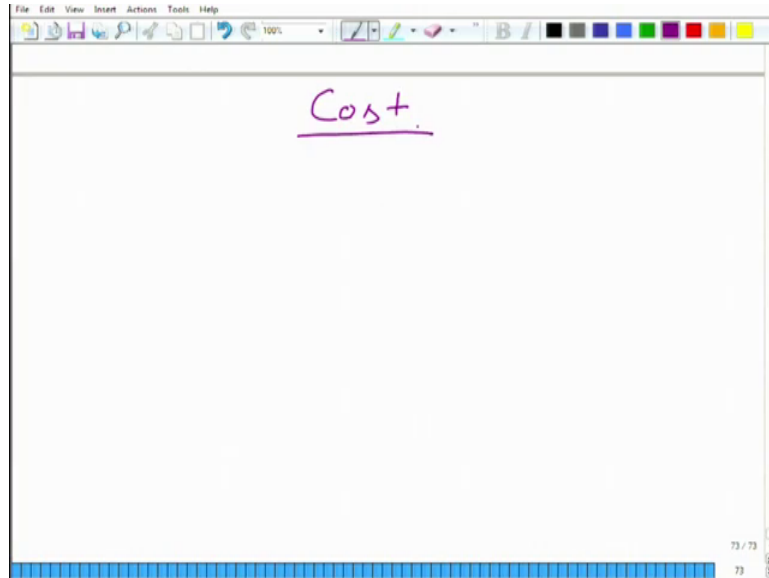
Student: (Refer Time: 02:46).

Double and what we are saying that here we are saying that we are taking isoquant for quantity 10, then 20, then 30, then 40 again we are taking for 10, 20, 30 and 40. So, what is happening here in constant return to scale from this point you know if we are moving here we need to double, we can find a corresponding point here let us say here we have again this is not to the scale, we need to double when we reach here. But here if we double constant increasing return to scale what will we get? We will get more than 20, but if we want to draw the isoquant for 20 what do we need to do? We need to increase the capital and labour by less than the double amount. So, in that case it would be closer.

Student: Closer.

To the isoquant 10 in comparison to constant return to scale isoquant 10 and 20; so, they will become nearer and nearer and you can use the same logic if you have decreasing return to scale the isoquant will be spaced further and further for the same values in comparison to constant return to scale. Now we can talk about let us start a new topic again in the producer theory and that is cost.

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Is it clear? The real thing that we talked about and it is quite important to understand not just the mathematics, but also graph it helps you understand the intuition behind these things.