Fundamentals of Electrical Engineering
Prof. Debapriya Das
Department of Electrical Engineering
Indian Institute of Technology, Kharagpur

Lecture – 22
Circuit Theorems (Contd.)

So welcome back. So, this is your example number 12. So, just beginning of this lecture let me tell you one thing, that for DC circuit we will so, we are solving so many problems. So, while we go for single phase as well as three phase ac circuits, at that time this you know this theorem all will remain same, but as AC a AC circuits complex number will be involved. So, at that time we cannot discuss so, many example because it is a time bounding. So, at that time number of example will be reduced, but things are same as your DCs circuit only thing is that there will handle complex number right.

So, come back to this example for example, in this case we have to determine your determine R R Thevenin right for this circuit, for look at that circuit there is no independent source in this circuit; that means, from your inspection you can make it that R Thevenin actually is equal to 0, because there is no independent sorry not R Thevenin sorry V Thevenin is equal to 0 right not R Thevenin V Thevenin is equal to 0 right.

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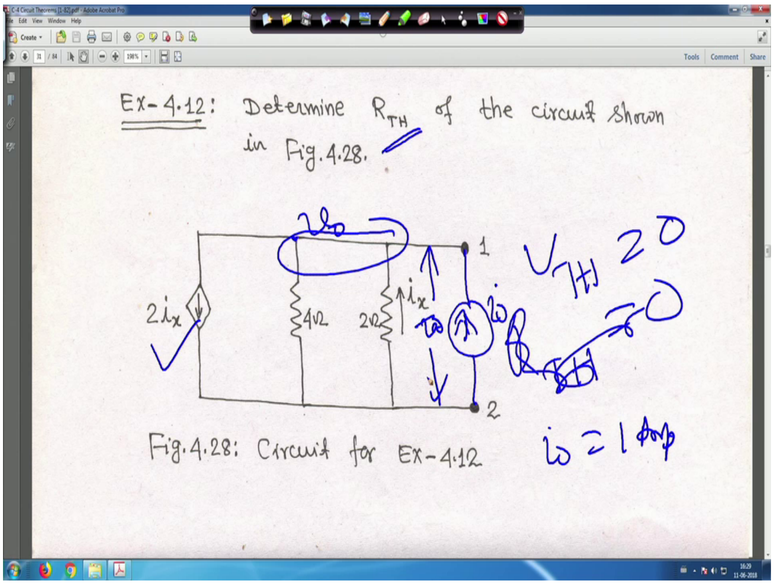

V V So, now, question is that V Thevenin is 0, but you can find out R Thevenin, because dependent source is there this is 2 i x and this is i x. So, dependent source is there so, what you can do is for example, you can connect a your what you call a current source say your independent current source i 0. You can take i 0 any values say 1 ampere right, 1 ampere and this voltage this voltage say it is V 0 V 0 means this is the voltage your V 0 right, this is the voltage your V 0 right, because this is a common node and this is your V 0; so, this voltage actually V 0. Therefore, R Thevenin you will get V 0 by i 0.

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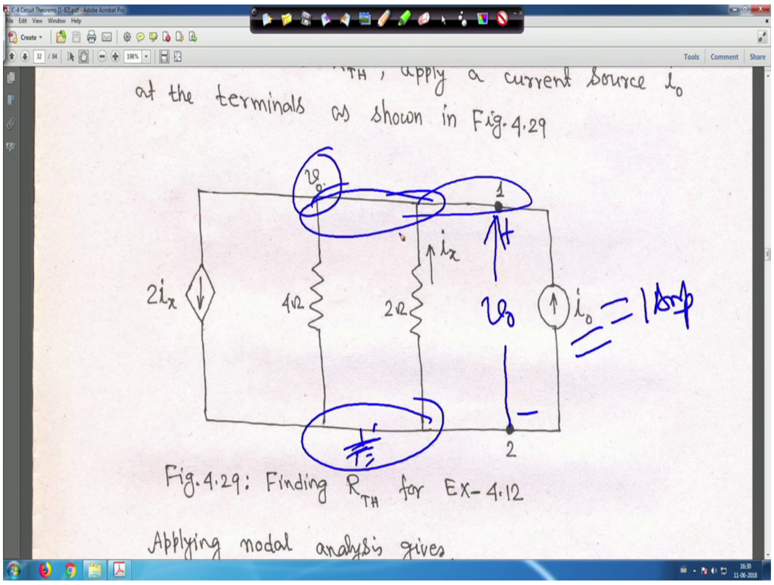

So, to do this so, let us go to that your equivalent circuit; so, it is V Thevenin is 0 and now here you have made i 0, that back because your one current source we have put it say i 0 is equal to 1 ampere say right. And this V V 0 actually that is something like a nodal analysis it is nodal analysis. So, this is your if you take this is your ground say, this is your ground right and this voltage is V 0 means this voltage is V 0 right.

Arrow means it is plus and this is minus right and this one this one is a common node, because no elements electrical elements are connected, basically it is a way this a it is a basically your what you call, there is a common node right. Therefore, let me let me clear it therefore, what you can do is you apply KCL for example, current flowing through this say in this direction.

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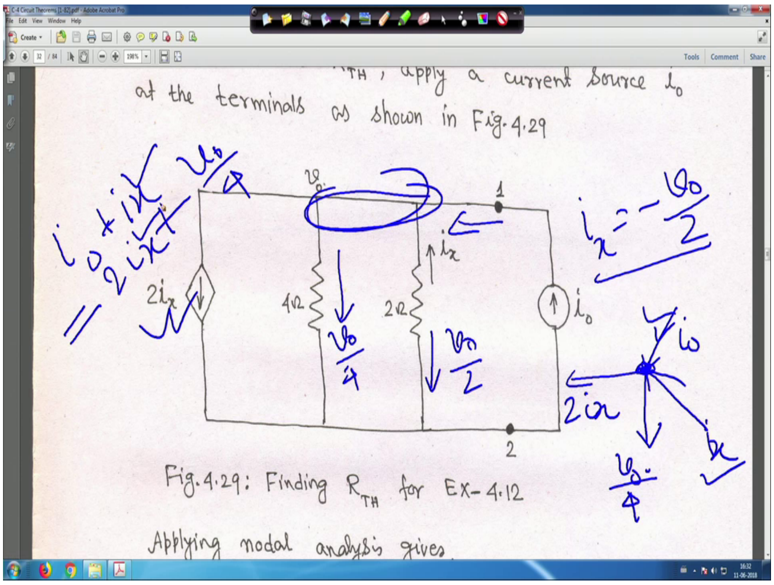

It is V 0 by 4 these are current right here, this i i x is upward is ok, but this direction current is V your V 0 V let me clear it, I make it again. So, this is your V 0 by 4 and if you take this direction the current it will be V 0 by 2 that means, i x is taken upwards that means, i x is equal to minus V 0 by 2 right.

And this is a this is your common node, this is a this is a basically same node right. Therefore, if you think that this is the node, then this 2 i x current; this current, this current is coming out from this node; this they applying KCL here that I making it here, it is a common node right. Another current V 0 by 4, this is your V 0 by 4, this is also living this terminal.

Another current say i x we will take this i x so, we know i x is equal to minus V 0 by 2 another current i x, it is entering into this node. So, this is your i x entering into and this i 0 current also entering here right. So, this current i 0 is also entering into the node right. So, this two current this i 0 and i x this two are entering. So, if I write here i 0 plus i x these two currents are entering into the node is equal to this 2 i x plus V 0 by 4, these are living as per this current source your first loss. So, 2 i x plus V 0 by 4, but i x is equal to minus V 0 by 2 see, if you put i x is here minus V 0 by 2 minus V 0 by 2, then you will get the value of V 0, you can solve for V 0 that, what we have done next right..

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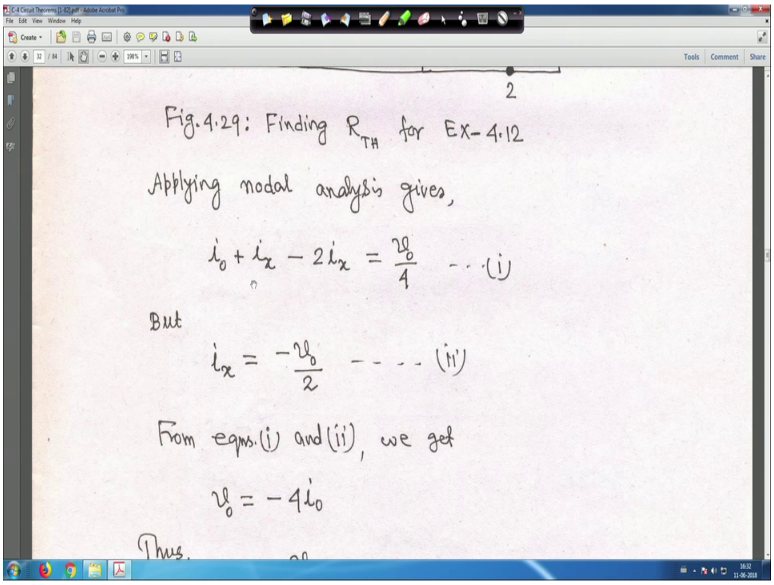

So let me clear it, so whatever I said so that is your i 0 what the way I wrote i 0 plus i x is equal to minus 2 i x is equal to V 0 by 4. There I wrote i 0 plus i x is equal to 2 i x plus V 0 per 4 V 0 by 4. So, i x is equal to minus V 0 by 2 I told you.

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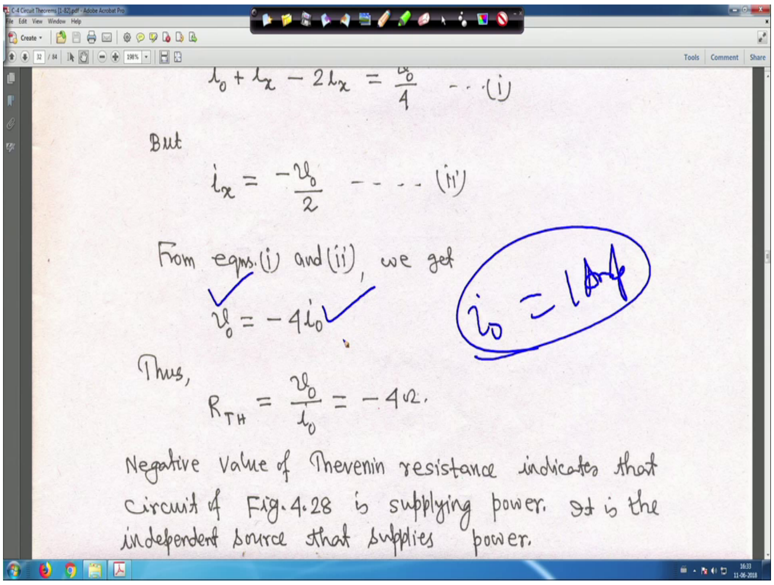

If you substitute you will get V 0 is equal to minus 4 i 0 right so; that means, i 0 is equal to you have taken, your what you call i 0 is equal to say 1 ampere any value, you can take it does not matter right. And directly you are get a here actually here, we have got the relation V 0 is equal to minus 4 i 0. So, here no question of considering also i 0 is equal to 1 ampere no need right.

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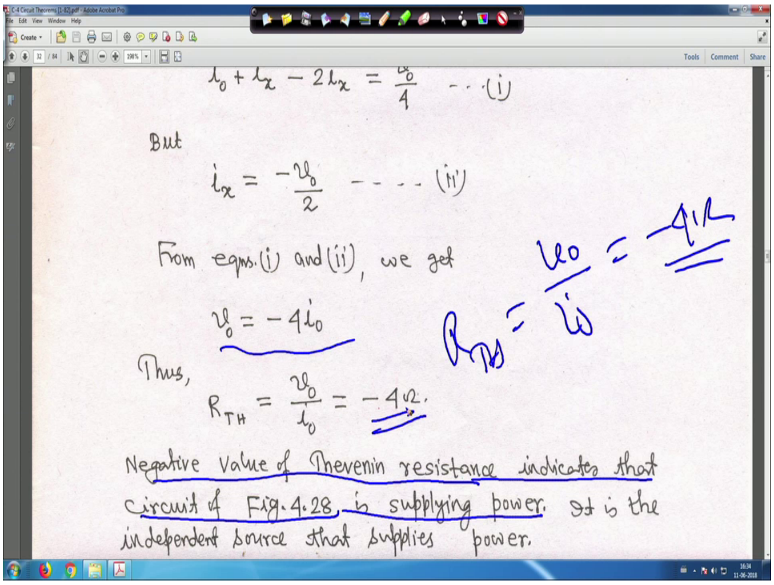

Because let me clear it, because R Thevenin R Thevenin is equal to V 0 by i 0 that is actually minus 4 ohm, I told you that when dependent sources are there in the circuit, there is a possibility that R Thevenin may become negative. So, it is minus 4 ohm that means, negative value Thevenin resistance indicates that circuit of that one that is twenty]circuit; twenty figure 28 is supplying power right..

So, if dependent sources are there in the circuit right, there it was a one your current dependent current source was there, if dependent current source is there, then there is a possibility that R Thevenin may become minus 4 that means, circuit actually supplying the power this is the meaning right.

So, in this case we got this relationship V 0 is equal to minus 4 i 0. So, need to set i 0 or V 0 V i 0 value, because directly we are getting V 0 by i 0 ratio is minus 4 ohm. So, this is one example I give for negative Thevenin resistance right ok. So, next we move to the your what you call another one.

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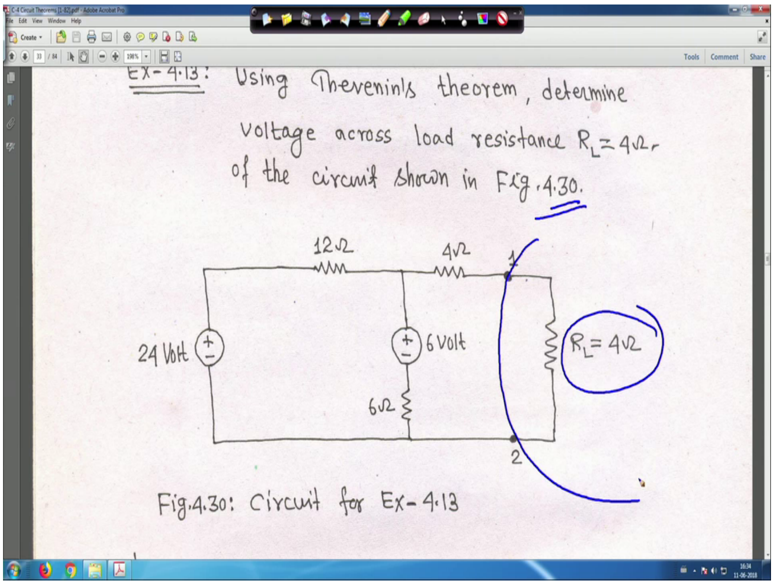

So, using Thevenin's theorem, you determine voltage across low resistance R L of the circuit shown in figure 30 right. So, this is your its chapter 4.30 you are making. So, it is a figure 30 right. So, we have to find out using Thevenin's theorem that your current through load resistance R L is equal to 4 ohm. So, for Thevenin's theorem, what we will do? First we will remove this load resistance right, we will make an open circuit right that what you have done right.

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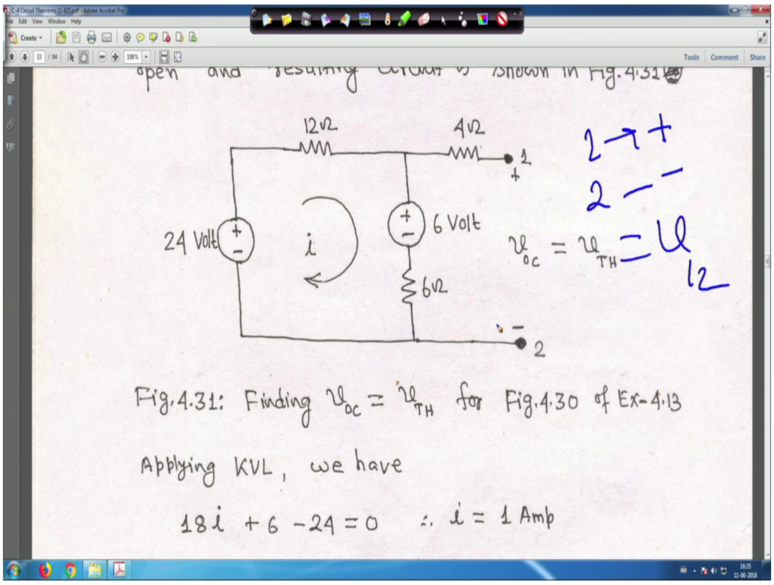

So, first let me clear it so that means, this one if you come that you have to find out your V your, what you call the V Thevenin is equal to; so, R L is equal to 4 ohm is opened here right, and your basically this one is equal to V 1 2, when we write 1 2 1 terminal means it is plus and two means it is minus right. So, V o V Thevenin V oc that V open circuit voltage is equal to V Thevenin actually is equal to V 1 2 right.

So, let me clear it so that means, this is actually plus so, this is arrow will be there and this is what you call V oc is equal to V Thevenin. So, the this is open circuit, so no current is flowing through this 4 ohm resistance, because this is open and therefore, you apply your what you call that KVL in this mesh. So, if you apply KVL in this mesh the current is I already I have marked it, but I am just making it again, the current is i.

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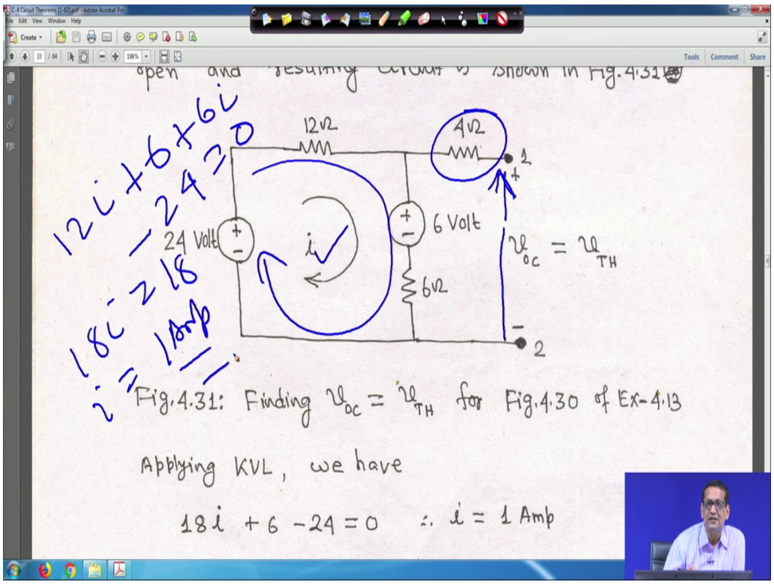

So, therefore, you can make it I am writing it writing here for you, it is 12 I, then plus now you know everything plus 6, then plus 6 I, then minus 24 is equal to 0 right; that means, your 12 i plus 6 6 i 18 i is equal to 18, 18 i is equal to eighteen. Therefore, i is equal to 1 ampere right so, i is equal to 1 ampere. So, when you know the i is equal to 1 ampere, let me clear it right.

So now, you apply your what you call here that your KVL. In this case there is no current flowing through this 4 ohm resistance is 0. Therefore, if you apply KVL moving like this.

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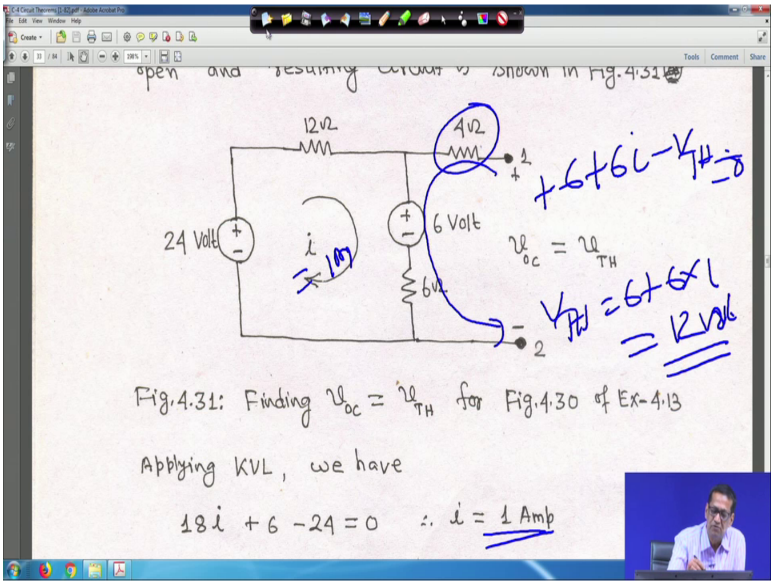

So, I can write here plus 6 right and i is equal to you got 1 ampere right; so, plus 6 plus 6 into i minus V Thevenin is equal to 0 because it is encountering negative terminal passed. Therefore, V Thevenin is equal to 6 plus 6 and i is equal to 1 so, that is your 12 12 volt. So, V Thevenin is equal to 12 volt here, it is already solved here everything is solved here.

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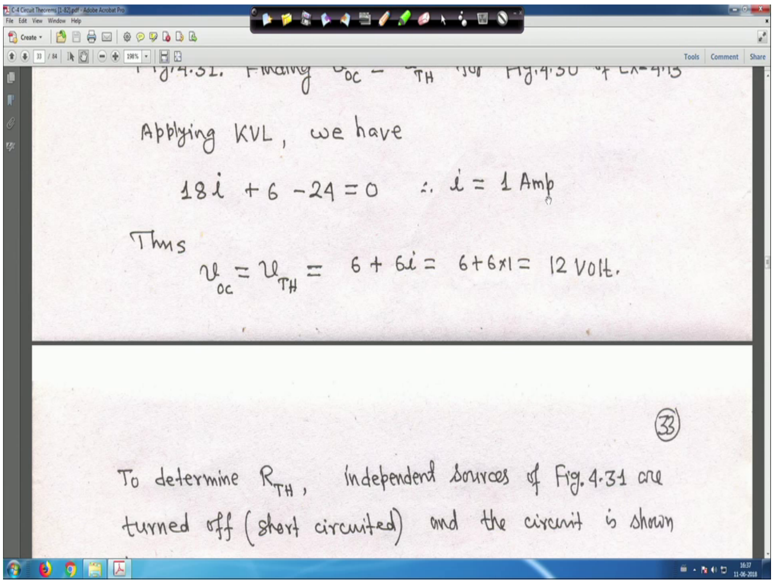

So, I will V Thevenin is equal to 12 volt. So, let me clear it so, if you come here that Thevenin V Thevenin here, the way I showed you it has been computed as your 12 volt right. This is your V Thevenin is equal to V oc is equal to V 1 2 same thing, next is we have to compute R thevenin. So, let me clear it.

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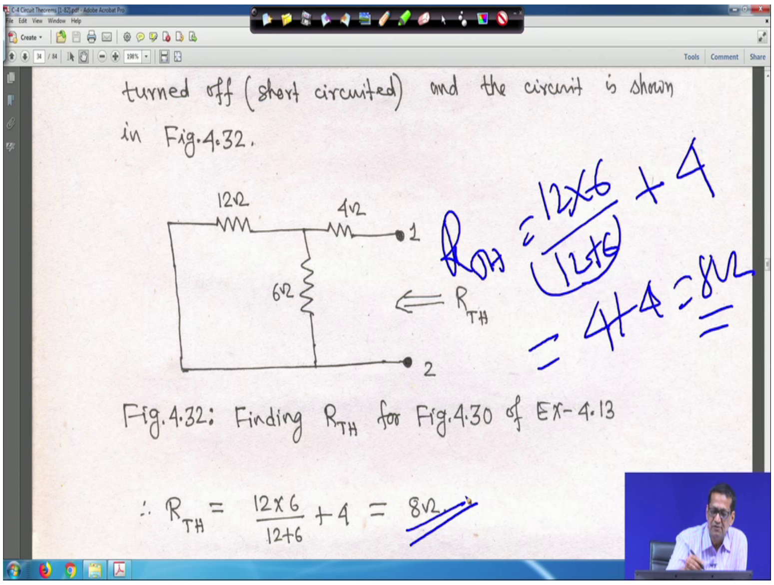

So, for R Thevenin that voltage source is short circuited right. So, if voltage source is short circuited for R Thevenin; that means, here this source is short circuited, this is short circuited and this is short circuited that means, this 12 ohm is and 6 ohm are in parallel with that this 4 ohm is in series that will be your R Thevenin.

So, let me clear it so, here this is your two sources shorted 12 and 6 are your what you call are in parallel; that means, your R Thevenin is equal to 12 into 6 by 12 plus 6 right plus this 4 ohm with that in series. So, basically it will be your 12 into 672 by 18; so, 4 plus 4 that is your 8 ohm right that is your R Thevenin. So, here R Thevenin is 80 8 ohm right. So, let me clear it

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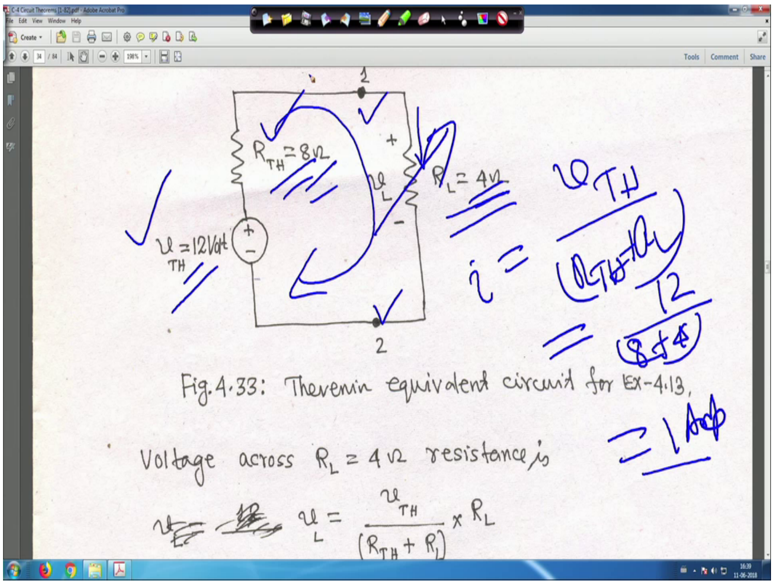

So, next is this that means, this is your V Thevenin, this is your V Thevenin with that R Thevenin is there in series 8 ohm. And now you connect that R L is equal to 4 ohm resistance in terminal work loss terminal 1 and 2. So, if you do so, then current flowing through this you find out; so, total resistance here it is 8 ohm, here it is 4 ohm 12 ohm. Therefore, i is equal to say V Thevenin by R Thevenin plus R L right.

So, V Thevenin is equal to 12 volt and R Thevenin is equal to 8 ohm and R L is equal to 4 ohm so that is actually 1 ampere right that is 1 ampere. So that means, your i is equal to 1 ampere. So, that you got through this that means, 1 ampere current is flowing through, this load resistance R L. If you change the R L to 5 ohm 6 ohm does not matter you will get if R L is variable and, if you change the R L to 6 ohm 7 ohm 8 ohm like this; you will get the current through R L, because rest of the circuit were even same. So, V Thevenin and R Thevenin always fixed part of the circuit will remain same, this is the this is the advantage of the Thevenin's theorem right.

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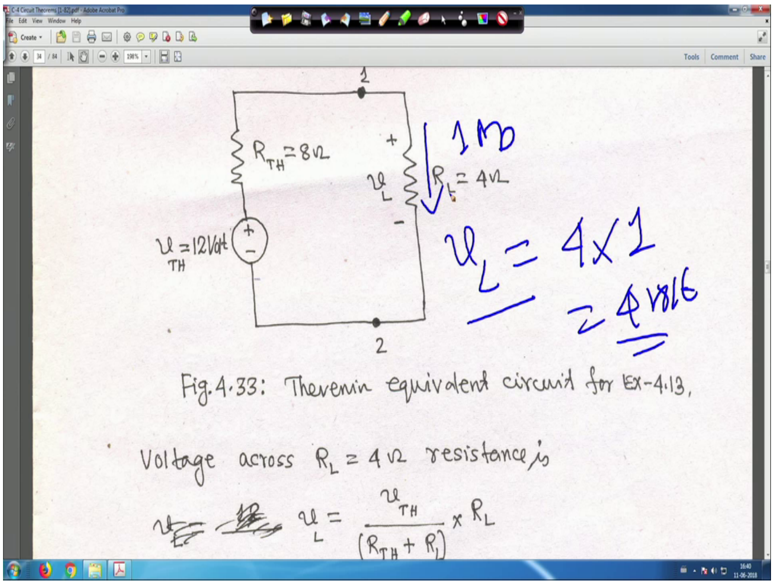

So, let me clear it. Therefore, your V l is equal to your 4 and current flowing through this is 1 ampere. So, it is 4 into 1 that is your 4 volt right. So, voltage across this load resistance is equal to 4 volt. So, let me clear it; So, that is that is why this is we have got that 4 volt right, here it is here it is 4 volt right V L is equal to so, next one varieties of problem we have taken.

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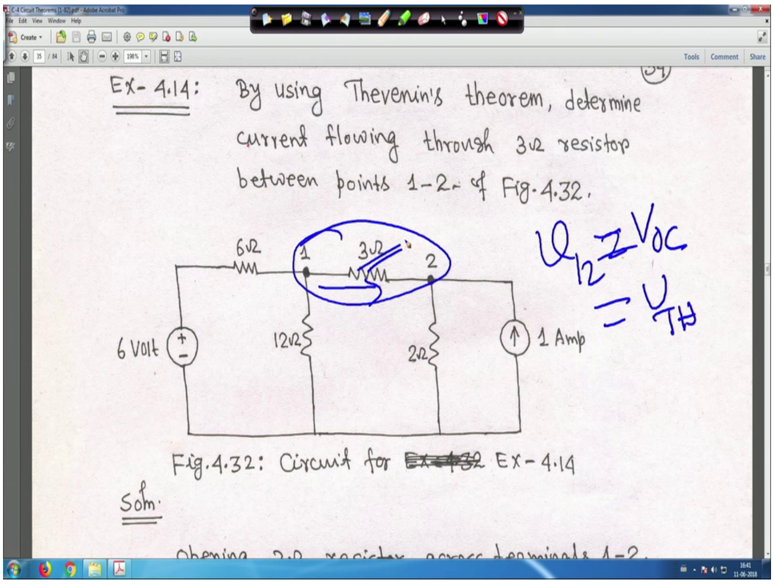

Next one is by using Thevenin's theorem determine current flowing through three ohm resistor between 0.1 and 2 right. So, this is the problem that you have to find out the current flowing through this 3 ohm resistance say, in this direction 1 to 2 so, between 0.1 and 2 the 3 ohm resistance is there.

So, first is you have to open it and you have to find out, what you call V 1 2is equal to V oc open circuit is equal to V Thevenin same thing right. So, that you have to first try find it out after that, you apply the after that you have to find out also that your R Thevenin. Now, if you open this 3 ohm resistance. First you remove it so, let me clear it. So, here if you look into that if you have open it, the circuit is like this.

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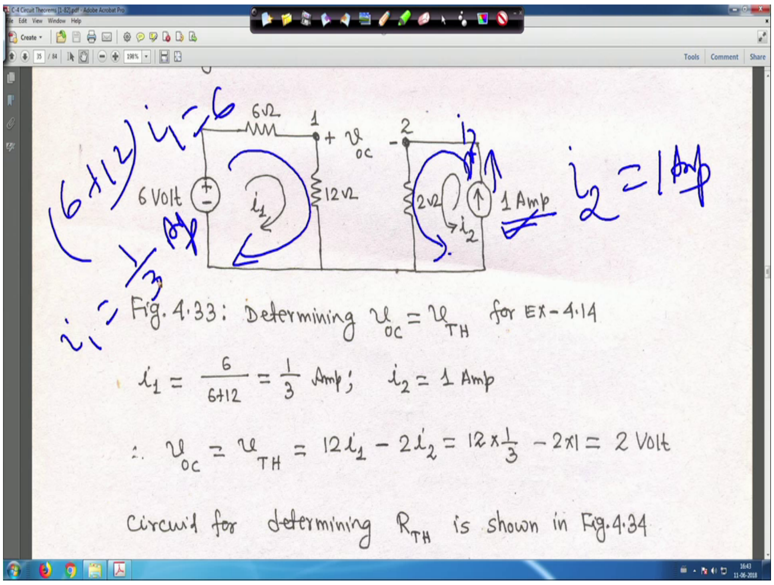

It is your V oc right this is 1 and 2 1 is positive 2 is negative arbitrary, you have we have taken if you want you can take 2 positive 1 negative, it does not matter arbitrary it has been taken right.

So, this voltage actually this voltage your what you call the V oc, that arrow tip is plus and this is minus. Now, if you want to find out what is your your V oc is equal to V Thevenin is equal to V 1 2. So, it is how we will find out that first this way we have taken i 2 right; i 2 is taken this way because it is open. So, this is a separate mesh it is a separate mesh because this is open so, no current is flowing here, because it is a say it is a its a this is open this is open right; so, let me clear it. So, this is open so, current is flowing like this here the way I have taken i 2, this is i 2 and this is your i 1 2 independent mesh. So, in this case direction of i 1 is like this and i 2 your one current source 1 ampere is like this. This is i 2 that means, i 2 is flowing also this way you have taken i 2 is equal to 1 ampere. Therefore your directly you can write i 2 is equal to 1 ampere, because only current source is there at current is in this mesh right.

So, in this case to get that your i 1 you have to apply what you call that KVL so, 6 plus 12 18 ohm right. So, 6 plus 12 into i 1 is equal to 6 because this 6 volt. So, i 1 is equal to one third ampere right is 6 by 18 so, one-third ampere. So, this i 2 is equal to 1 ampere and i 1 is equal to one-third ampere. So now, let me clear it. So this is your i 1 and this is your i 2, whatever I have explained and this is your V oc is equal to V Thevenin right. So now, what you do to get that your to want to get that V o c; suppose I want to apply KVL like this, say clockwise your what you call that anti clockwise direction right.

So, suppose I have written like this. So, it will be look into that it will be 12 i 1, because i 1 is flowing like this 12 i 1, then it will be minus 2 i, 2 because i 2 is moving like this, but we are moving anticlockwise. So, it is minus 2 i 2 right is equal is equal to V Thevenin is equal to they have writing here for you say.

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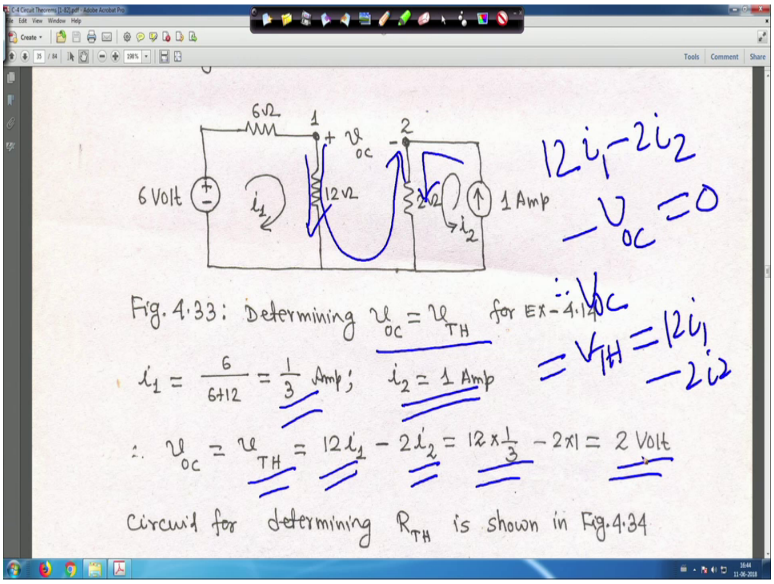

It is basically 12 i 1 minus 2 i 2 then encountering minus terminal first. So, minus V oc, V oc is V Thevenin is equal to 0 that means, V oc say you write is equal to V Thevenin is equal to 12 i 1 minus 2 i 2, that is what I have written V oc is equal to V Thevenin is equal to 12 i 1 minus 2 i 2 that is 12 into 3 minus 2 sorry 1 by 3 minus that is 2 into 1 is equal to 2 volt. So, V Thevenin is equal to 2 volt right.

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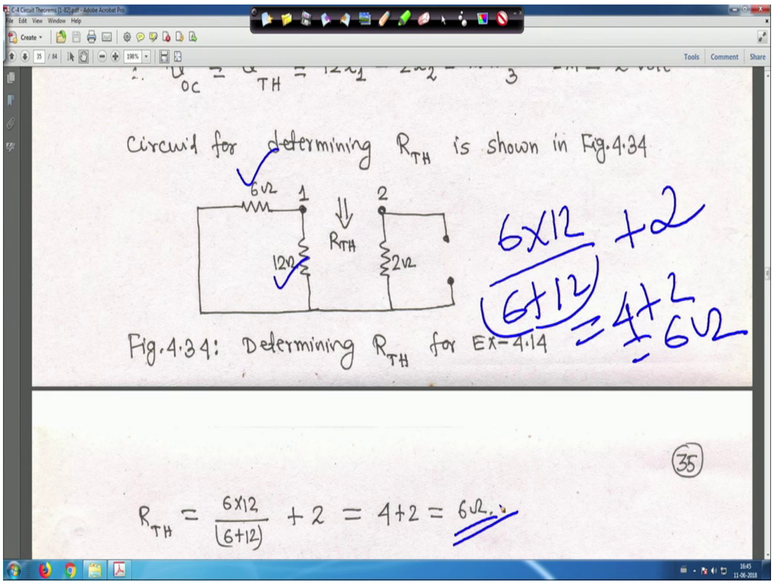

Next is now let me clear it. Therefore for the your getting your R thevenin, this there is a current source. So, current source here, it is open you have to turned off and voltage source, it is shorted here it is shorted right. So, finally, you have to from that you have to get your R Thevenin in between 1 and 2 terminal 1 and 2 so, let me clear it.

So, in this case 6 ohm and 12 ohm they are in parallel; that means, 6 into 12 divided by 6 plus 12 right, with that this 2 ohm is in series so, plus 2 right. So, that that is is equal to 4 this is this will be 4 this part will be 4 plus 2 is equal to 6 ohm. So, that is why your R Thevenin is equal to here it is 6 ohm.

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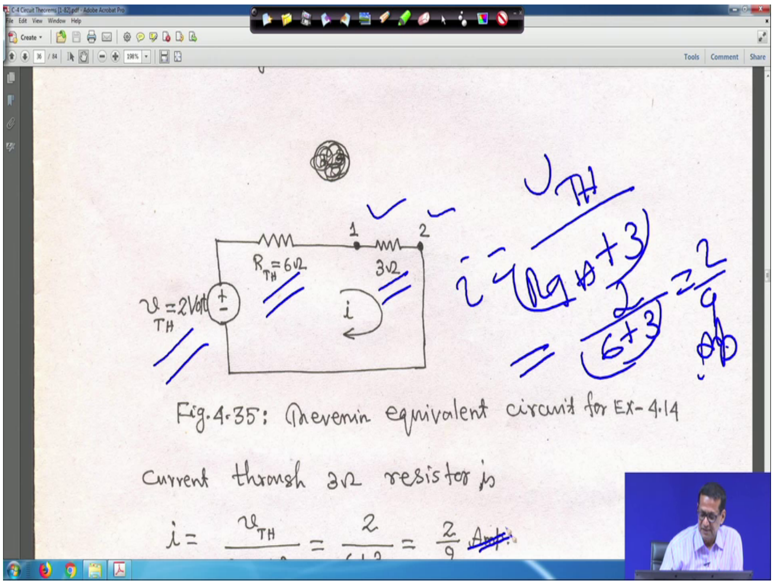

So, let me clear it. Therefore, you your this is your V Thevenin we got 2 volt R Thevenin we got 6 ohm right, with that 1 and 2 the 3 ohm is it is this is connected and path is circuit is closed. So; that means, your i is equal to it is V Thevenin divided by your R Thevenin plus this 3 ohm resistance right. So, that is your 2 divided by 6 plus 3 right, that is equal to 2 by 9 ampere. So, to 3 ohm resistance the 2 by 9 ampere current is flowing that is what is when done here right. So, this is your 2 by 9 ampere V Thevenin by R Thevenin plus 3.

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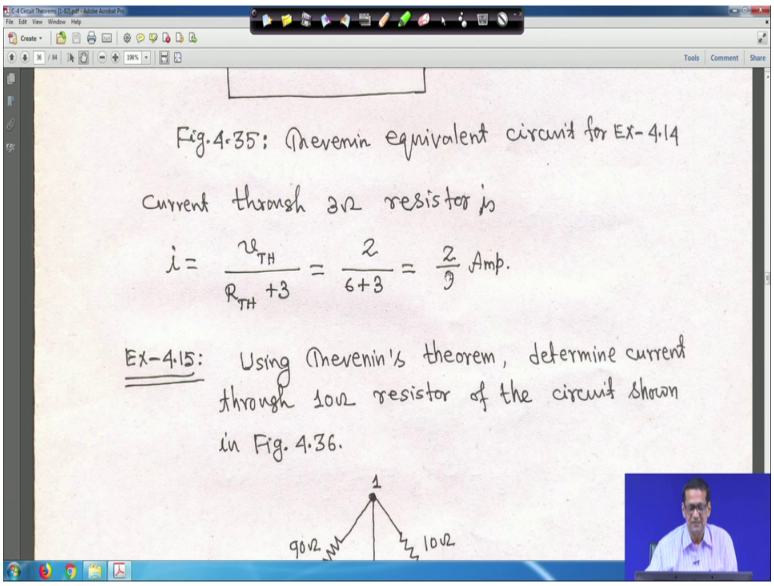

Now, take this hope you are understanding this right. Next using Thevenin’s theorem determine current through 10 ohm resistance right to 10 ohm resistance of the circuit shown in figure 36.

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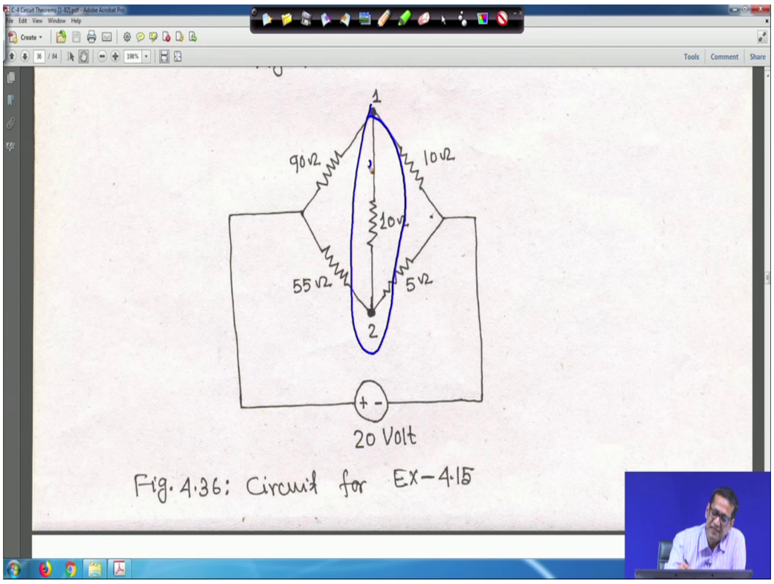

This is actually figure 36 just hold on, let me move it off little bit. So, this is my your what you call this is my figure 36 and 10 ohm means in this 10 ohm right 1 to 2 not this one 1 to 2 right; this 10 ohm, you have to find out the current through this 10 ohm resistance. And this voltage is given 20 volt now question is when it will be your you have to find out, then this 10 ohm resistance say this 10 ohm resistance first you have to remove it; that means, you have to make it open circuit to get the open circuit voltage uses Thevenin voltage. And then you have to find out also that your R Thevenin, Thevenin resistance. So, first let me clear it. So, what you can do is that look the 10 ohm resistance is open this has been open right.

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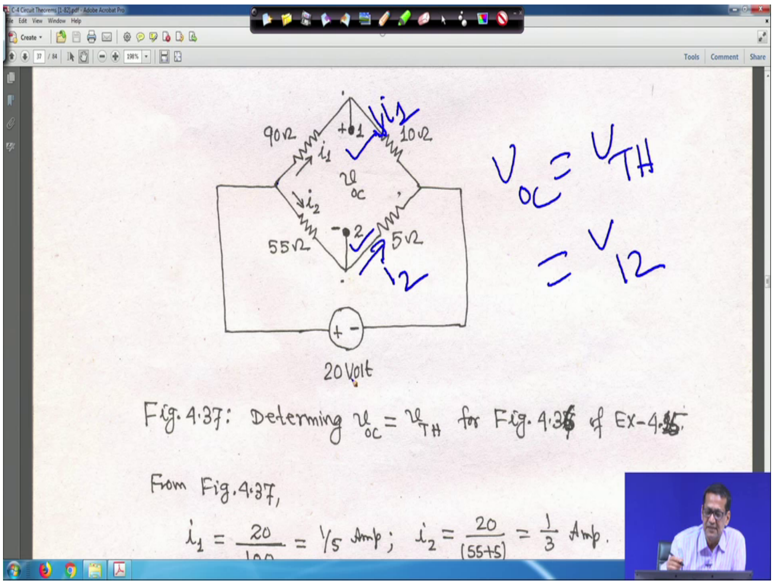

So, this is your terminal 1 and this is terminal 2 so, V oc actually nothing, but V Thevenin is equal to several times I am telling is equal to V 1 2. Now, once we have done it once you have done it, now if you look into that your what you call the circuit you have to find out, what is i 1 what is i 2. So, this as it is open that 1 and 2 this 10 ohm resistance is open. So, this i 1 current this is 90 ohm and 10 ohm both are in series. So, here also that i 1 current is flowing. Similarly this is open so, i 2 is flowing that means, this branch also i 2 current is flowing right. Therefore you have to find then this and across this across this the voltage actually will be 20 volt your what you call is connected.

So, if I redraw the circuit let me clear it, if I redraw the circuit see I mean just for your understanding; so, 90 ohm and 10 ohm this two are in series.

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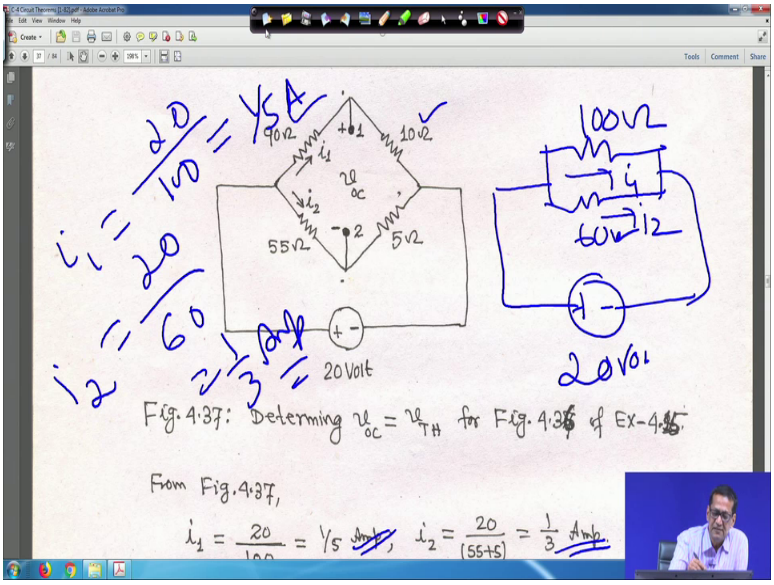

So, basically it is 100 ohm right and similarly 55 and 5 ohm both are in series. So, it will be your 60 ohm and with that this 20 volt plus minus is connected, this is 20 volt right and current through this it is i 1 and current through this it is i 2 right. Therefore, i 1 is equal to your 20 volt divided by 100. So, it will your become 1 by 5 ampere right, that is here it is i 1 is equal to 1 by 5 ampere.

Similarly, i 2 is equal to your 20 volt, because it is parallel circuit divided by your 60. So, that is 1 by 3 ampere right; so that is your 1 by 3 ampere. So, let me clear it so that means, you got i 1 is equal to 1 by 5 ampere and i 2 is equal to say i 1 we got 1 by 5 ampere right and i 2 you got 1 by 3 ampere,

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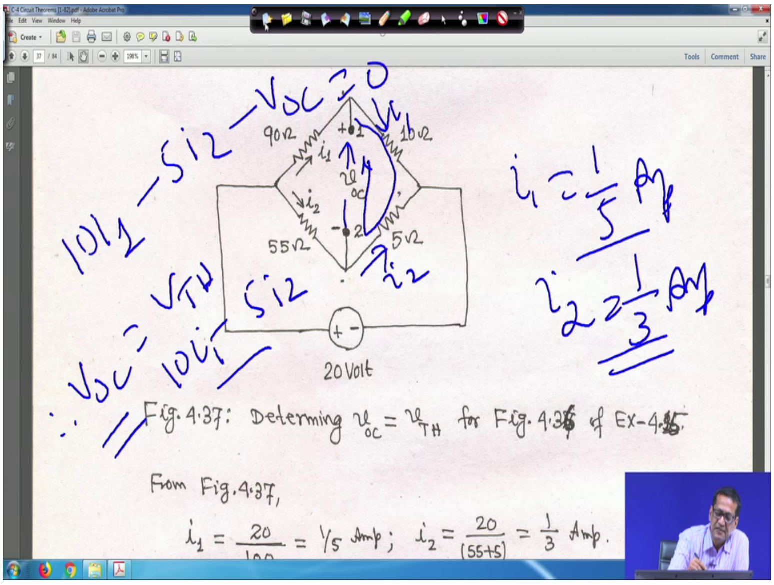

This we got now what you do, in this here you apply here in your what you call KVL, this is your V oc; o c means V Thevenin. So, if you apply your what you call that KVL' so side here also this side also left hand side also you can apply, you will get the identical result same result if you make it.

So, we are moving like this so, this i 1 current is flowing here and here i 2 is like this right. So, it will be 10 i 1 it is 10 i 1 minus this 5 i 2, because it is it is we are moving this way we are moving this way, but it is going this way. So, minus 5 i 2 minus V oc that is equal to 0 that means, your V oc is equal to V Thevenin; this is equal to your 10 i 1 minus 5 i 2. Now put i 1 value is equal to this much and i 2 value is equal to this much you will get V Thevenin voltage right. So, let me clear it. .

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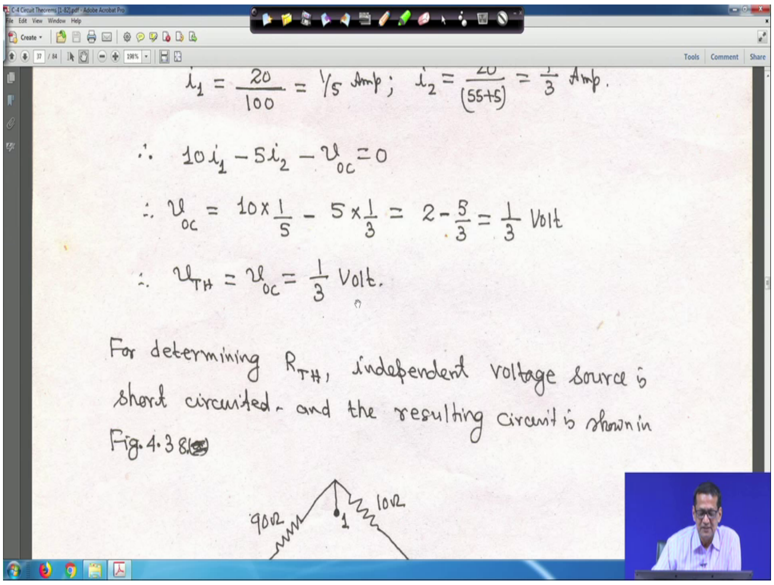

So, with this you will get that V oc is equal to one-third volt right. After putting those values we will get V Thevenin is equal to V oc is equal to this one-third volt 1 by 3 volt right.

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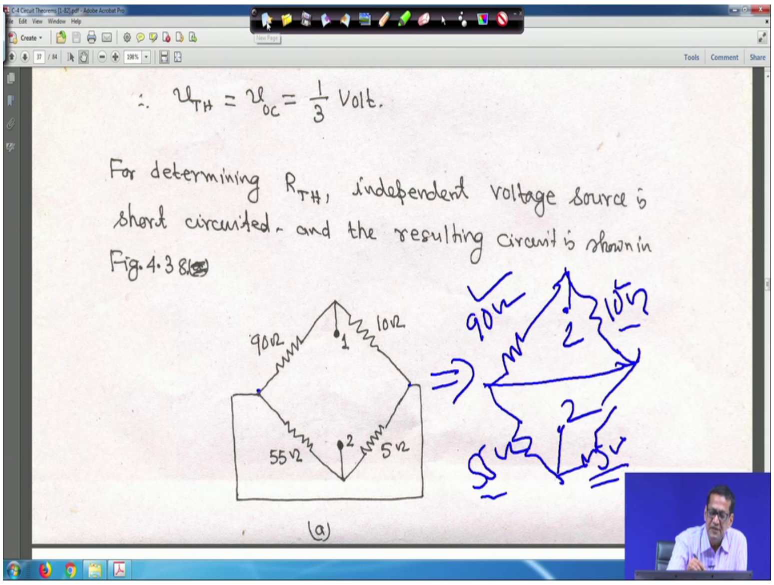

Now, second thing is now we have to get the R Thevenin also here, your in between terminal 1 and 2, what is the R thevenin. So, for R Thevenin this voltage source is shorted this voltage source is shorted; that means, these two point is shorted. If you draw the equivalent circuit diagram for this one, then I can make this is one, this is one right. And your first before making it let it hold on hold on let it be there.

So, what I can do is for getting this your this equivalent to this; These two point are your this point and this point is connected by a wire only. So, if I make it like this so, this is 90 ohm make it 1, this is 10 ohm right; that means, this point I connect like this and this is your 55 ohm and this is your 5 ohm right. So, this is 1 and this point is 2 right.

So, this two are shorted these two are shorted. So, if it is so; that means, as these two point are shorted, so 9 and 10 I mean this we have trap together; 9 and 10 are in parallel and 55 and 5 are in parallel. So, if you do so; that means, if you redraw this circuit again if we redraw this circuit again, then this will be terminal 1 and this will be your 90 ohm and this will be your 10 ohm this is your common terminal and, this will be your 55 ohm and this will be your 5 ohm and this is terminal 2 right.

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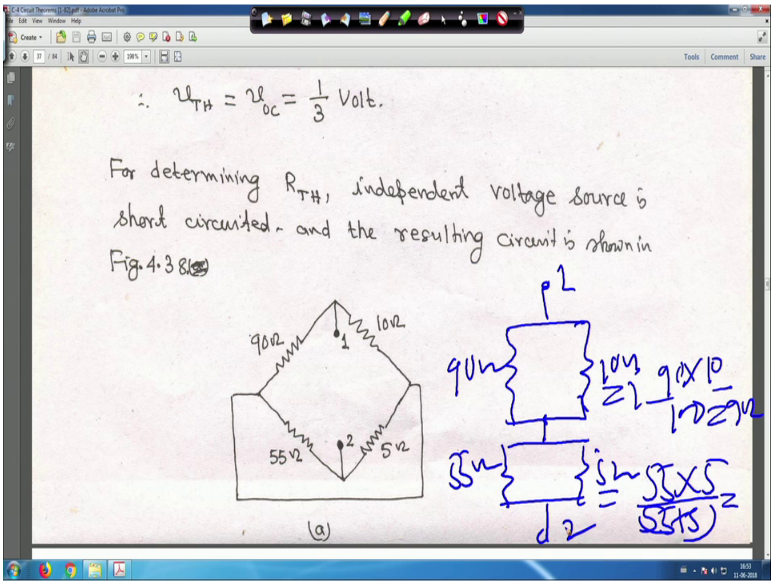

So, equivalent to this 190 into 10 divided by 100 right. So, it will become for this part it will become 9 ohm and this one you have to calculate 55 into 5 divided by 55 plus 5 right. So, it is 90 plus 10 so, it is 100 and it is 55 plus 560 so, this calculation is there. So, that will give you your what you call that means, this one and this one are in series; so, let me clear it.

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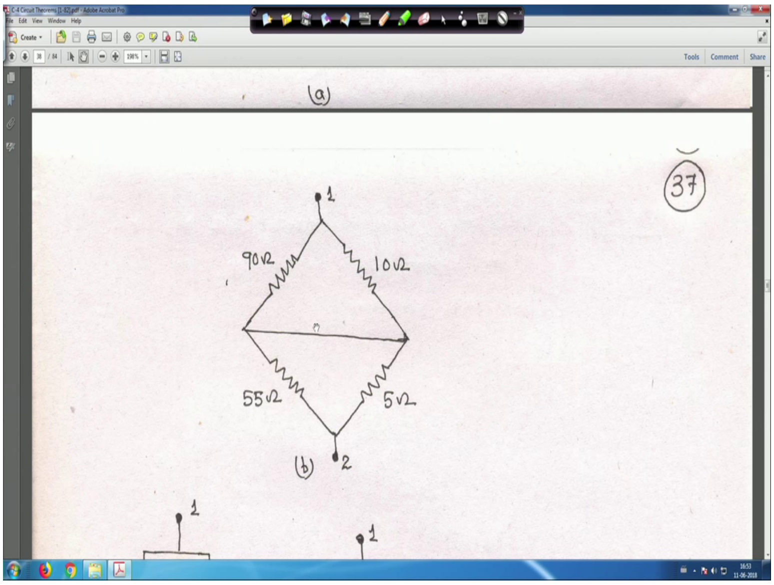

So, whatever we have done this is shorted I told you.

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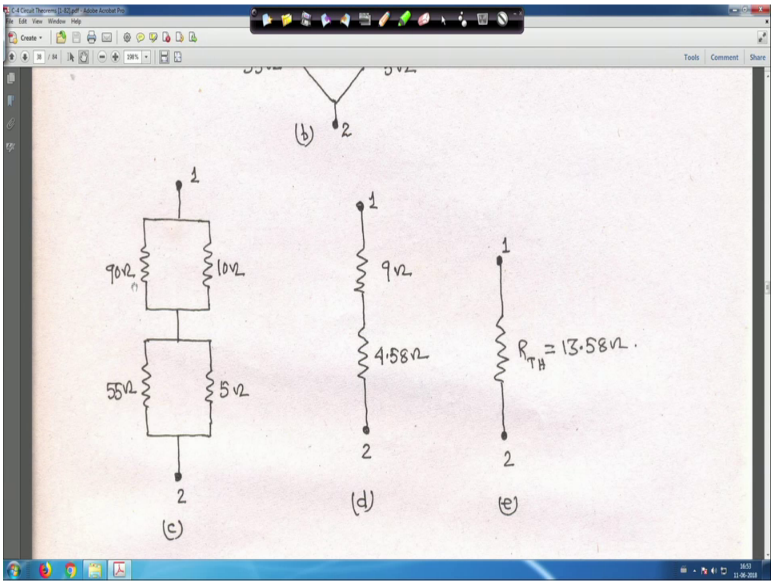

After that these two are shown 90 and 10 and 55 and 5 are in parallel, then this is 9 ohm and equivalent to this it is coming 4.58. So, total is R Thevenin is equal to 13.58 ohm right.

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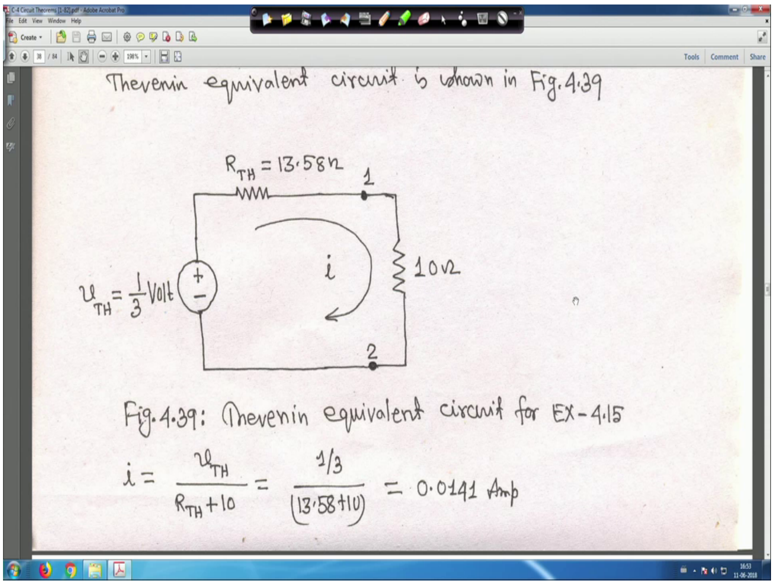

And with this this 10 ohm your this 10 ohm now is connected here, 10 ohm is this is your V Thevenin one-third volt R Thevenin is this one and 10 ohm is connected here with that. So, ultimately you will get V Thevenin by R Thevenin plus 10 right is equal to one-third 13.58 plus 10. So, this is actually 0.014 ampere this is your i right so, this is easy to understand.

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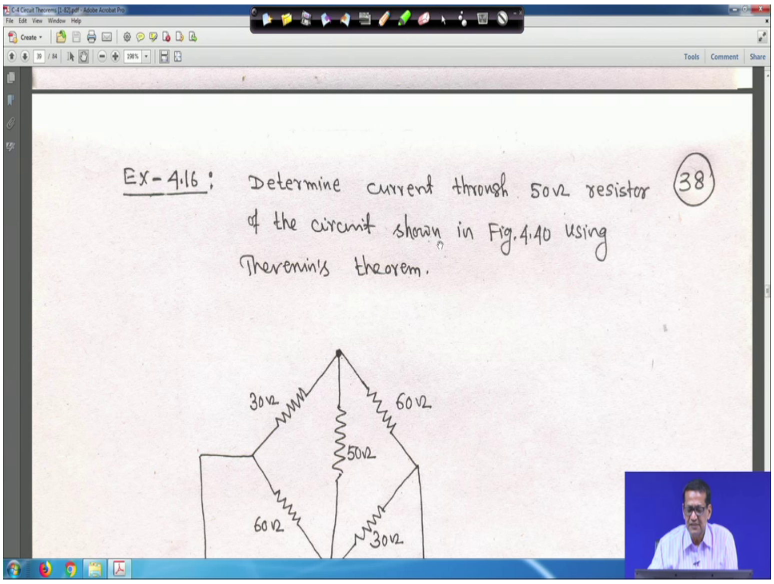

So, next is you determine the current through 50 ohm resistor of the circuit, shown in figure 40 using Thevenin's theorem, in this case difference between the previous one and this one that here data may be different, but structure of the circuit in difference that one extra resistance is connected here that is 10 ohm right.

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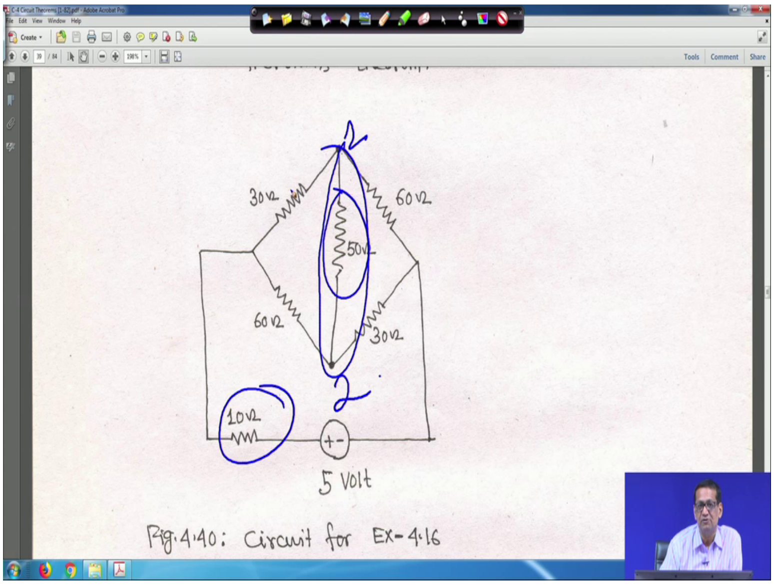

Previous case there was no there was no resistor here, but one 50 ohm 10 ohm resistance is there and you have to find out that what is the current through the 50 ohm resistance say this terminal you mark at 1 and this terminal you mark at 2 right and then, you follow and so, first is we have to open this resistance 50 ohm resistance.

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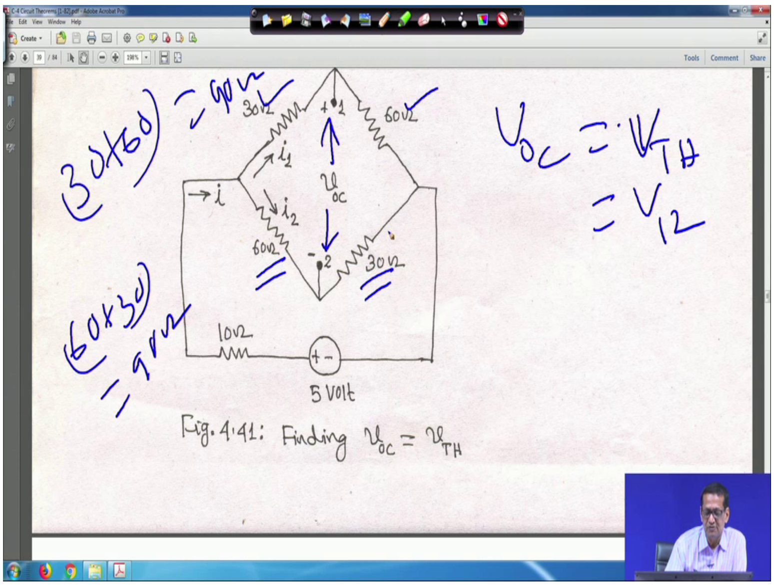

So, if you open it your circuit will be like this circuit will be like this. So, in this case this voltage this is your V oc actually every time I am telling, V o c is equal to V Thevenin is equal to sometimes V 1 2 same thing right. So, in this case if you do this look as soon as you open this one, this 50 ohm resistance is opened. Now, look at that this 30 plus 60 this two are in series; so 30 plus 60 for this circuit is equal to 90 ohm, this side also this is 60 this is 30, so 60 plus 30 is equal to 90 ohm right. So, here it is in series 90 ohm and 90 ohm and; that means, this is 90 ohm this is also 90 ohm; that means, let me clear it.

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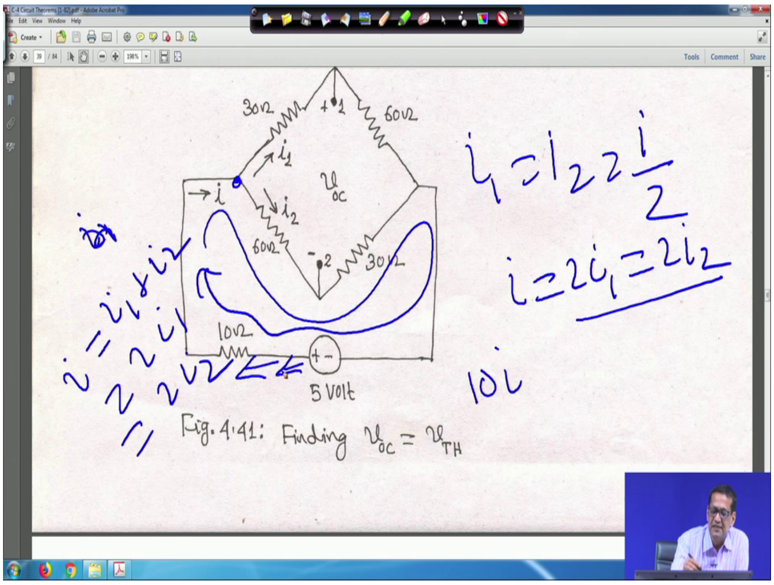

That means i 1 actually is equal to i 2 is equal to i by 2, because whatever current is entering at this point, it will half of the current of half of I will go here half of I will go here. So, i 1 is equal to i 2 is equal to i that means, i is equal to 2 i 1 right is equal to 2 i 2.

So, right this is the first thing now you can easily solve your what you call for i 2 and i 1, because i 1 is equal to i 2 and i is that means, here if you apply KCL here i sorry, let me clear it if you apply KCL here, your i is equal to i 1 plus i 2 right, that is is equal to either 2 i 1, or is equal to 2 i 2 this is what has been written here. Now, you apply KVL to get your i your what you call i 1 and i 2 i 1 i 2 same. So, you apply KVL like this, you apply KVL like this. So, if you make it like this then what will happen this 10 into i, because i is flowing through i is flowing let me clear it.

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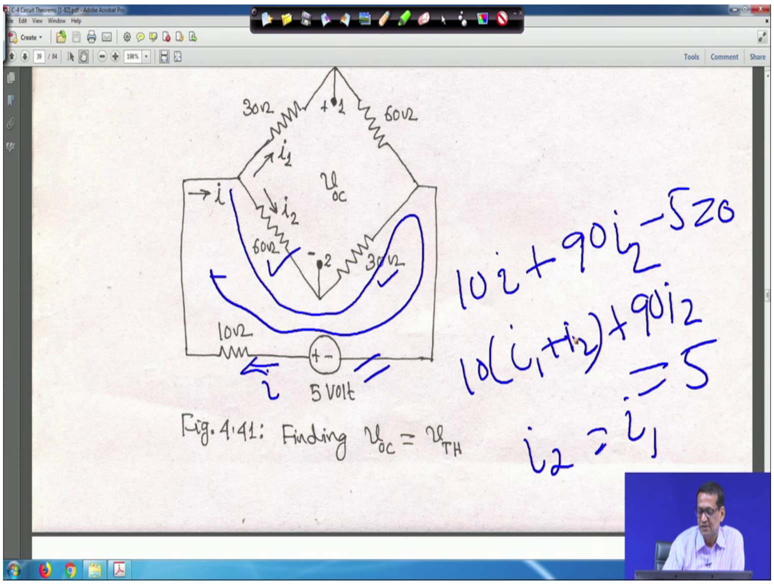

So, i is flowing through this is i so, 10 into i right plus we are move we are moving like this; we are moving like this we are moving like this plus your this i 2 current is flowing through 60 and 30; So, 90 i2 90 i2 right, then minus 4 is equal to 0 because this 5 volt so, right but i were, but question is that 10 i is equal to i 1 plus i 2 plus 90 i 2 is equal to 5 right, but i 2 is equal to i 1. If you put it here, then you will get i 1 solution for i 1 and i 2.

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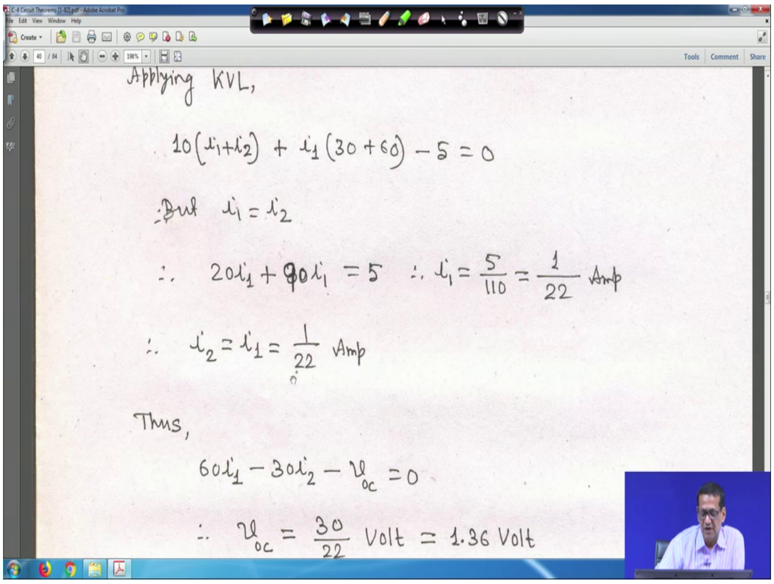

And that is actually done here; that is actually done here right. So, this is your what you call i 2 is equal to i 1, we have got your 1 by 22 ampere.

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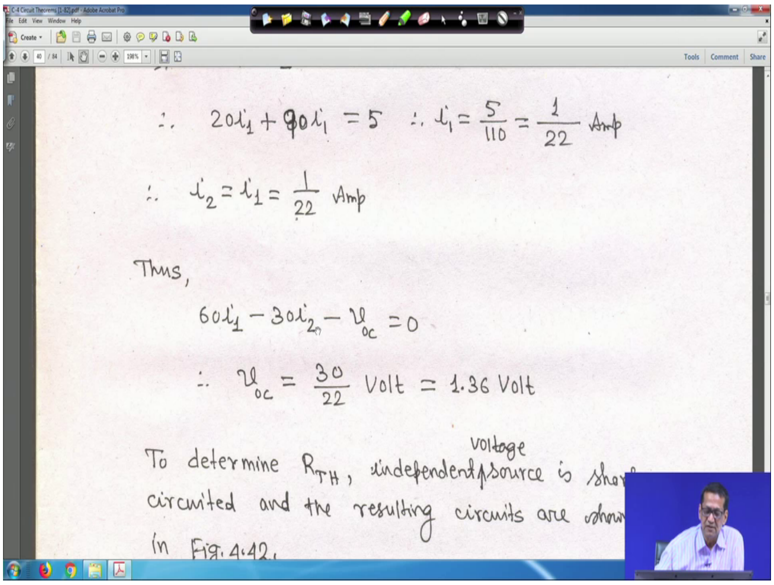

So, once you get i is equal to i 2 is equal to i 1 is equal to this is your 1 by 22 ampere, after that you apply KVL in that thing right, just let me go to that circuit. So, here you can here you apply your KVL, you can apply you can apply KVL either your either like this; this is your V oc this loop you can apply.

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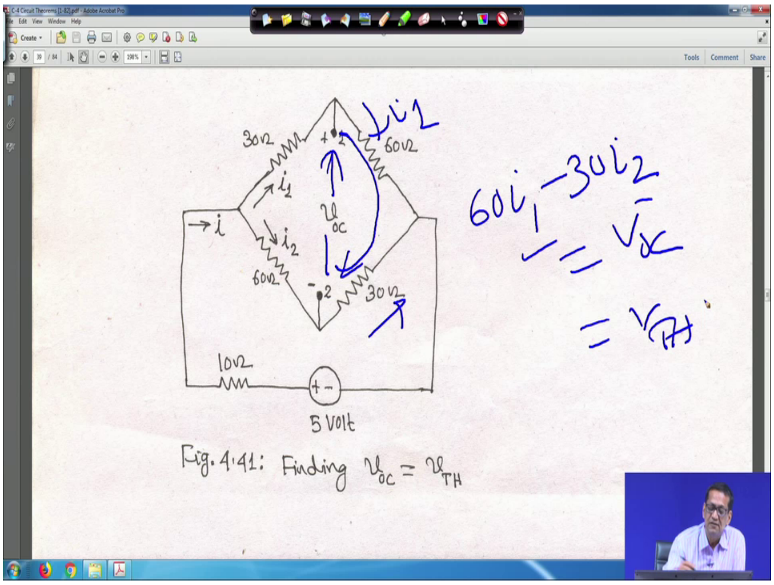

So, it will be your 6 this i 1 is current flowing there and this is your i2. So, if you right 60 i1, then your minus 30 i 2 is equal to V oc right. Put i 1 i 2 is you get V oc is equal to your V Thevenin. So, that is what is written there what is written here right.

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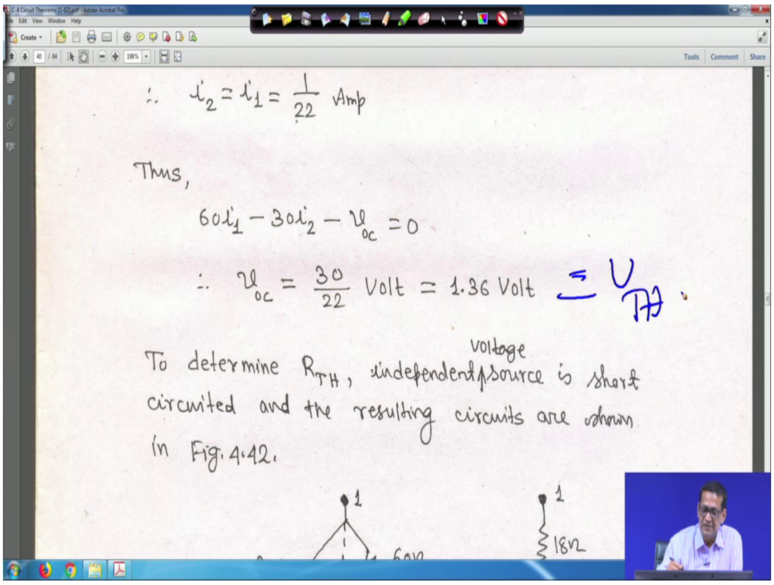

So, we got V oc is equal to 1.36 volt right; this is V Thevenin. V o c is equal to there should not be any confusion there should be is equal to V Thevenin..

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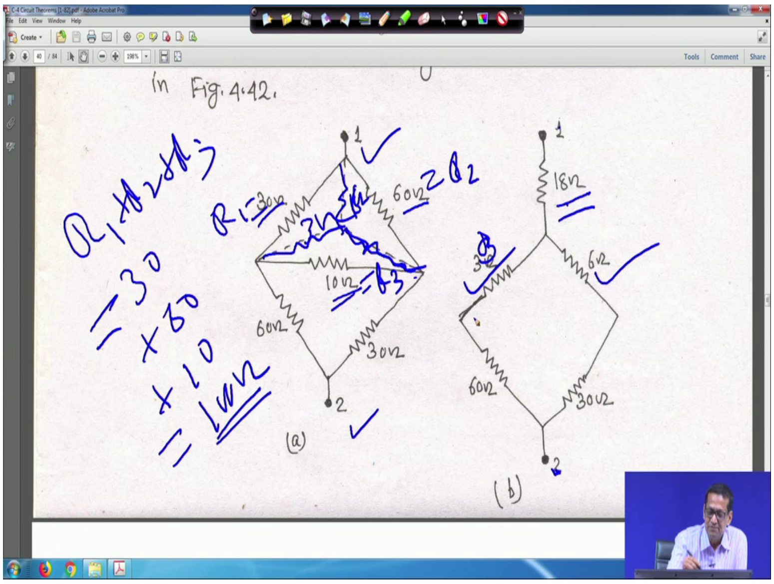

Now next is next is your equivalent R Thevenin. So, what you do that this will be shorted look at that, this will be shorted this will be shorted that means, this 10 ohm resistance. Suppose it is not there so; that means, this will come here. This 10 ohm will be there, because it will be shorted these 2 point is connected.

So, nothing will be there say suppose I am making it for you suppose it is not there. So, 10 ohm will be here right. So, let me clear it. So, that is that is what we have done in that here right. So, here we are getting your what you call that your this 30, 60 and 10 ohm 60 and 10 ohm, they are in it is in delta we have to convert it to star right. Suppose this is your R 1, this is your R 2 and this 10 ohm is equal to R 3. So, R 1 plus R 2 plus R 3 is equal to 30 plus 60 plus 10; 30 plus 60 plus 10 is equal to 100 ohm right. And then you can find out this what is the value of this branch, what is the value of this branch, this is the this is the resistance.

So, 30 into 6 30 into 60 900 by R 1 plus R 2 plus R 3 so, it is 18 ohm right, because 30 into 60 divided by 100 18 ohm. Similarly 30 into 10 right this branch this; that means, this is 18 ohm 30 into 10 divided by 100 that means, this is 3 ohm this is that is your this is 3 ohm and another one is 60 into 10, 600 by 100 that is your 6 ohm. So, 18 ohm and this one and 2 terminal is like this, this is 1 this is 2 right; that means, let me clear it; that means, 3 ohm and 60 ohm this two are in series and 6 ohm and 30 ohm they are in series.

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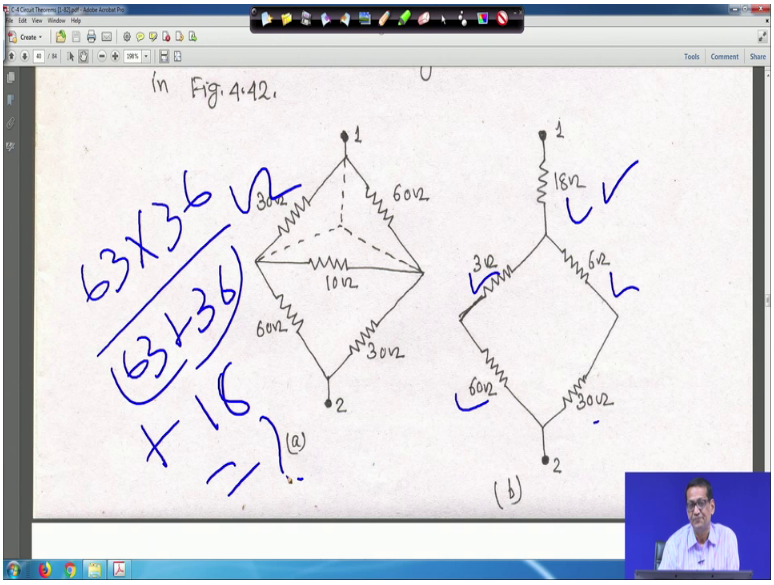

And with that this combine is in parallel that means, it is equivalent is 63 your this is 63 ohm and this is 36 right, divided by 63 plus 36 whatever it comes with that 18 ohm is in series with that so, that is equal to what right.

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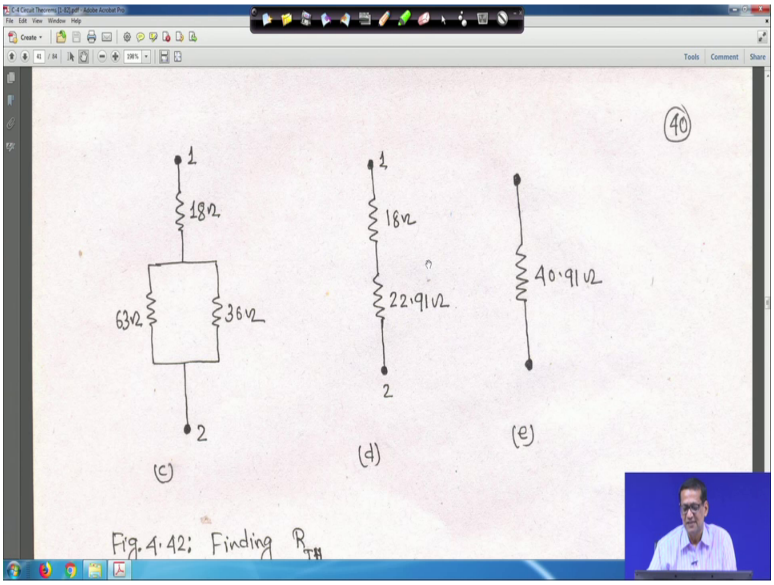

So, if you let me clear it that is what we have made it that 18 ohm and 63 and this parallel if this two are in parallel. So, equivalent towards coming 22.91 and ohm and 18 18 ohm is in series. So, total is 40.91 ohm. Now R Thevenin is 40.91 and here, it is your here it is 40.91 and V Thevenin in that with that you connect, now the 50 ohm resistance which was taken off right. So, you will get the current and that is the current flowing to 50 ohm resistance. So, let me clear it. .

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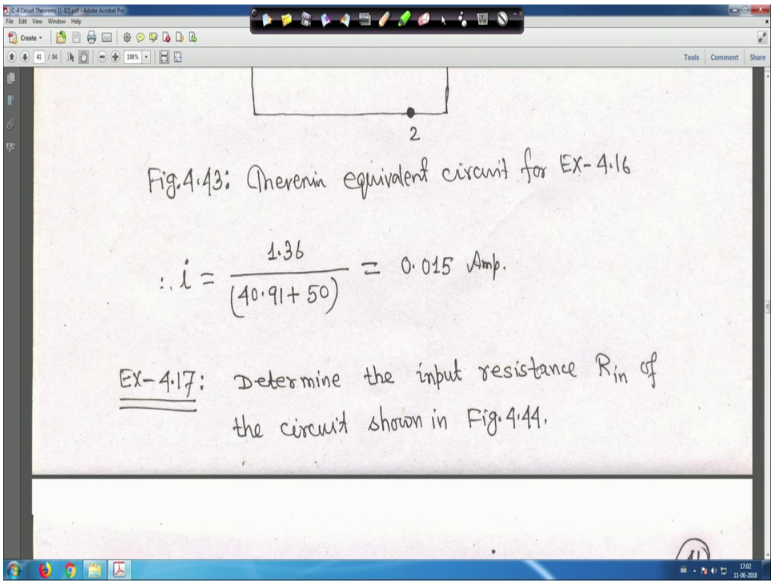

So, right with that you will get your i is equal to your 0 point your 0 1 ampere right. So, it is easy Thevenin's theorem rather this solving full circuit only obtains V Thevenin and R Thevenin and then, connect that resistance across it and you will get that current flowing through the resistance so, up to 50 ohm resistance. So this is the current flowing.

Thank you very much we will be back again.