Management Accounting
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Lec39
Labour Variances - 3

Welcome students. So, we are calculating the different labour variances and this second problem we calculated the first two variances is that is labour cost variance and labour rate of pay variances. Labour costs variance we found out was 13,000 negative and labour rate of pay variance we found out as a 6400 negative. So, we could find out the first reason for the labour cost becoming negative because labour rate paid was higher as against the standard for the first two categories of the workers that is skilled and semi-skilled.

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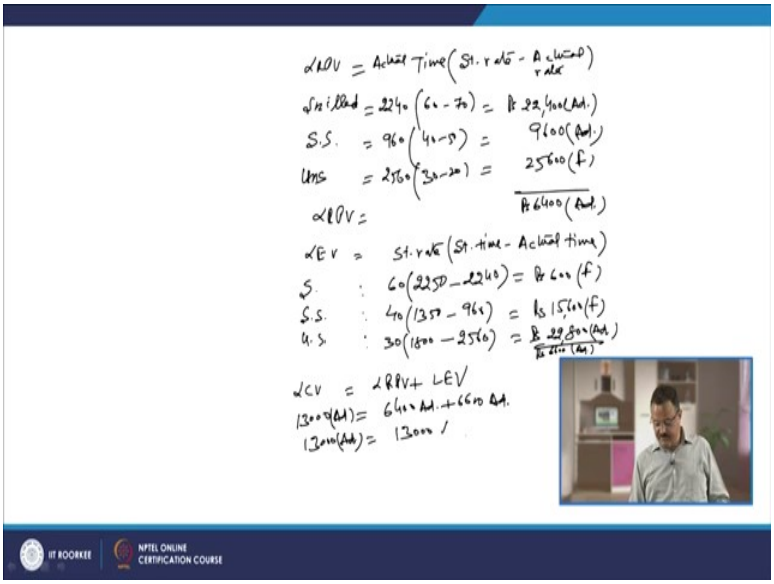

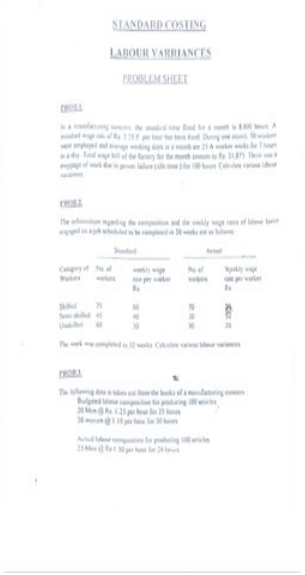
STANDARD COSTING

LABOUR VARRIANCES

PROBLEM SHEET

PROB 1

PROB 2

PROB 3

Now, we will go for the third category of the variances in this problem and that is labour efficiency variance. This is the labour efficiency variance or the LEV for calculating the labour efficiency variance again, you have to go for the skilled, then for the semi-skilled and then for the unskilled, right? These are the different types of the workers skilled, semi-skilled and unskilled and for calculating that what is a formula now?

The formula is again, let us recall the formula, the formula is standard rate into standard time minus actual time. So, now as I told you in the previous class, the variance which you want to calculate, if you want to calculate the labour rate of pay variance the rate will go inside the bracket and time will come out, if you want to find out the efficiency that efficiency is measured in terms of the time taken by the labour.

So the time will go inside the bracket and the standard rate will come outside. So, rate will be standard not actual and you will be multiplying this time difference between the standard and actual by the rate. So, in case of the skilled, what is a standard rate, the rate is 60 and what is the time, standard time was 2250 and what is the actual time 2240. This is the time because we have given here in this problem. How many weeks are standard? Standard weeks are 30 and in this case, how much is the number of workers? We are using the number of workers are 75.

So, this works out as 75 multiply 30 this works out as how much this works out as 2250 and in case of the actual actually 32 weeks and how many numbers of workers actual are there 70, so it means 32 and 70 this works out as 2240. So, we had calculated this way standard rate is 60 given to us and number of workers the standard time we have calculated they are the labour weeks. They are the labour weeks, the standard label weeks in case of the skilled category of the workers were 2250 and the actual labour weeks, which will be used in case of the skill categories are 2240 and if you calculate this variance you find it out.

This variance will work out as how much this will come up as rupees 600 favourable. Because standard rate, standard time was 2250 actual time is 2240 because we have used 5 less-skilled workers because they were not available in the required amount. So, we have reduced the number of the skilled workers. So, accordingly the labour weeks also have come down from the 2250 to 2240 and the rates standard rate remaining the same your variance has become favourable that is sum of rupees 600.

In case of the semi-skilled what is the standard 40 and what is now the Standard Time 1350 and what is the actual time 960, if you find it out how we have calculated it 45 multiply 30 and in the second case 30 multiply 32. So, right, this way we have calculated this time. So, 40 multiply 1350 minus 960 and this comes out as how much, rupees is significantly favourable, this is rupees 15,000. If you find it out 15600 is the favourable variance.

And in case of the unskilled, unskilled is now is going to create the problem for us. What is the standard rate? It is 30 and what is now the labour weeks, the standard labour weeks were 1800s and actually labour weeks are how much, 2560 so what is this variance is going to be finally, this variance is going to be how much, which is 1800 minus 2560 is the 760 labour weeks we have paid extra for we have utilized extra, standard rate being 30, this variance is coming up as how much, this is 22,800 adverse, right 22,800 adverse.

So, if you calculate this variance, finally this variance works out as how much that is rupees 6,600 adverse, 6,600 adverse and now apply the check here. So, it is the labour cost variance is

equal to labour rate of pay variance plus labour efficiency variance; there is no idle time right? There is no idle time problem in this case so we have no two factors for the idle time. So, it means we have only two things and in the labour, in this case labour cost is a function of labour rate and the labour efficiency.

So, the cost variance was how much 13,000 adverse and this is how much 6400 adverse plus 6600 adverse. So, this is 13,000 adverse is equal to 13,000 adverse and we have found out that this adverse variance, that is the labour cost variance has been because of both the factors, our rates have also increased as against the standard that is why the labour rate of pay variance was, net labour rate of pay variance summing up the three categories was 6400 adverse and efficiency is also affected where we have reduced the skilled and semi-skilled workers.

But we have increased the unskilled workers we have paid them the total means, as per the labour weeks we have used unskilled labour and finally the net result of the labour efficiency variance was rupees 6600 adverse. So, sum total of these two is equal to the labour cost variance. So, here in this case extra cost of Labour by sum of his 13,000 has been because of both the factors labour rate is also higher, labour efficiency is also less and finally the total cost has gone up, labour cost has gone up.

Now, you have to apply your own efforts in the real life scenario. For example, this is a case of a company. We have to find out why we were not able to find out the required number of workers in that particular category and why we are not able to find out the rate which should have been paid, right? So, in this situation we will have to be careful that in future, that when you work out the standards you should be nearer to the actual information with regard to any indicator which is relating to the market or pertaining to the market.

So, that the gap between the standard and actual is as less as possible and we are able to means achieve the target and the difference between the standard and actual is almost, either not there or if it is there it is insignificant, so till now we discussed these two problems. These were the simple problems; first problem is very simple, where we were given the composite information

without dividing it into different category of the workers. We were given the standard rate standard time; we were given the actual rate actual time.

In the second problem then we had some little more tense, we added into and we found out that in the total composition of labour we might require different category of the workers, skilled semi-skilled and unskilled. So, if that kind of situation is given to us, how to calculate the variances, that is the labour cost variance, labour rate of pay variance and labour efficiency variance. So, in that case, you have to calculate these variances separately for all the three categories and sum them up.

What we did here, we did the same in the case of the labour cost variance, we did the same process for labour efficiency variance. We did the same process for the labour rate of pay variance. So, you calculate it individually for skilled, semi-skilled and unskilled then is sum it up and then finally you arrive at the total variances that is a labour cost variance, labour rate up variance, labour efficiency variance.

Putting them say means comparing these one with the 2 and 2 with the one, you will find out that labour cost will be finally equal to LRPV or LEV or vice versa. So, what we could do here is that we could find out the reasons for the labour cost variance, which was largely negative and the reason for this labour cost adverse variance was that we paid higher rate of labour and we means couldn't use the labour in a very efficient manner.

So, both the factors have contributed, next time we have to be very careful so that this kind of inefficiencies are not experienced with regard to the labour. Now, we move to the third problem and third problem is a very composite problem, comprehensive problem I would say, it includes almost everything. It answers almost every question that you are given the different categories of the workers.

You are given the problem of wastage of time also, you are given the problem of time say output per hour also, and then finally you have to calculate all the 5 variances or the six variances. So, if

all these problems we have to deal with then I think we should have a problem like that which is a comprehensive problem and there we are able to address all such issues. So, in the next problem, now which is the third most comprehensive problem we will try to learn in a complete manner all about the labour variances.

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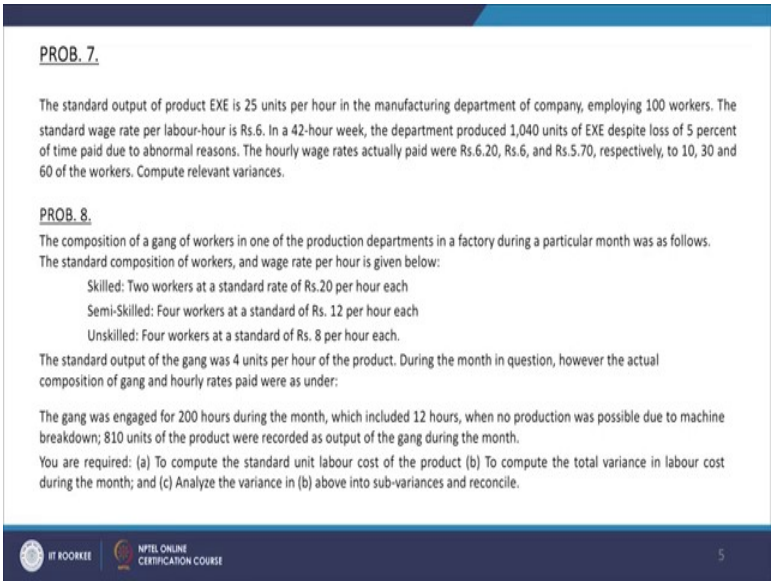

So this is a comprehensive problem given here. The problem is first we will understand the problem in detail. All the important issues involved in this problem and then we will start solving this problem and calculate different variances. So what the problem is? The composition of a gang of workers in one of the production departments in a factory during a particular month was as follows. The standard composition of the workers and the wage rate per hour is given below.

Skilled, we are given 2 workers at a standard rate of rupees 20 per hour each, per worker is paid 20 rupees that is the say, per hour 20 Rupees to one skilled worker. Semi-skilled 4 workers at a standard rate of 12 per hour each, every semi-skilled worker is paid 12 rupees per hour and third is unskilled workers are 4 in total we have used and they are paid at the rate of, means one worker is paid at the rate of 8 rupees per hour. The standard output of the gang was 4 units; the standard output of the gang was 4 units per hour of the product.

All these workers how many workers 2 plus 4 plus 4, 10 workers, they have produced in total 4 units in one hour, because the role of the skilled workers is different, role of the semi-skilled worker is different, role of the unskilled workers is different, right so they have in total or these

10 workers have produced 4 units that was the standard, means not have produced, but they are expected to produce. Standard output of the gang was, that was estimated to be standardized to be that these 10 workers working together, performing their different roles.

For manufacturing one unit of production in one hour they are expected, they are standardized to produce 4 units together right, now during the month in question. However, the actual composition of the gang and hourly rates paid were as under. They are different, again now because quite possible, you do not get the skill labour as you want it. So sometime we have to change the composition. In this case also, we have changed the composition and how we have changed the composition; skilled we have used 2, so skilled we expected to hire 2, so we have hired 2.

They were available and when you talk about the rate, so rate paid to them is again 20 rupees which was the standard rate actually rate paid is also the 20 rupees. So, there is no deviation and this between the standard and actual. In case of the semi-skilled they were expected to be 4 in number as a standard and were expected to be paid at the rate of 12 per hour but actually we have hired 3 only, they were only available 3 and the rate we have paid is 2 rupees extra as against the standard, we have paid 40 rupees per hour to the semi-skilled workers.

Third is unskilled and in the unskilled category we required or estimated to be required as 4 workers, but actually we have used 5 because one less as semi-skilled was available so we increase one unskilled, so unskilled became 5 against 4 and semi-skilled became 3 against 4 and in case of the rate, unskilled rate also has increased by 2 rupees. We have paid 10 rupees per hour to the skilled worker as against the target rate of 8 rupees per hour.

Now the gang was engaged for 200 hours during the month. 200 total hours during the month which included 12 hours when no production was possible due to machine breakdown, here is the problem of the idle time. 810 units of the production were recorded 800 units of the product were recorded as output of the gang during the month. So, it means how many workers we are involving on the job when we are putting them on the job.

They are for the 200 hours, 200 hours and what is the output of the 10 workers, per hour is 4 units. So, what was the targeted production, targeted production was 800 units, in the total number of hours that is the 200 hours. But actually the production is increased by 10 units against the target of 800. We have produced more by 10 units that is 810 and despite the fact that there was the breakdown of machine, idle time of 12 hours.

So, actually you can say that the total number of the workers means they have worked on the machine or in the plant that is only for 188 hours. We have paid them for 200 hours but actual work done by them was only for 188 hours, if you multiply by the 10 standard workers it means how many total man hours have been used, 1880, 180 against 2000 standard hours we have actually used 1880 hours and we have paid for 200 hours, but actual work was done for only 188 hours multiplied by 10 workers. So the total work was done, productive time was 1880.

So, this is one important factor we have to address. Finally, looking at this information of the standard and actual you are required to compute the standard unit labour cost of the product, standard unit labour cost of the product. We have to calculate the standard unit labour cost of the product. It means, first you have to calculate the total standard cost of all the three category of the workers and then what is the output per hour that is a 4 units per hour.

So, standard cost to be divided by the standard output per hour, so you will find out the first, the answer to the first question that is the standard unit labour cost of the product. After that we will have to calculate the total labour cost variances, total labour cost variance and the sub variances. Total labour cost variance is easy to find out and after that we will calculate all other variances as sub variances, because once you are calculating the cost.

It means you are able to calculate LRPV also LEV also and once you are calculating LEV, then the bifurcation the dissection of LED will be multiply three sub variances LITV then LMV and then is the LYV, that is a Labour Idle Time Variance, Labour Mix Variance and Labour Yield Variance. These three has to be equal to the Labour Efficiency Variance and Labour Cost Variance has to be equal to the Labour Rate of Pay Variance and the Labour Efficiency

Variance, right?

So, now we will answer all these questions asked in this problem one by one and the first question is which is asked in this problem is the standard unit labour cost of the product, to compute the standard unit labour cost of the product. So, let us calculate this standard unit labour cost of the product and for calculating this we will have to start doing certain things so what is the first information given to us in this case?

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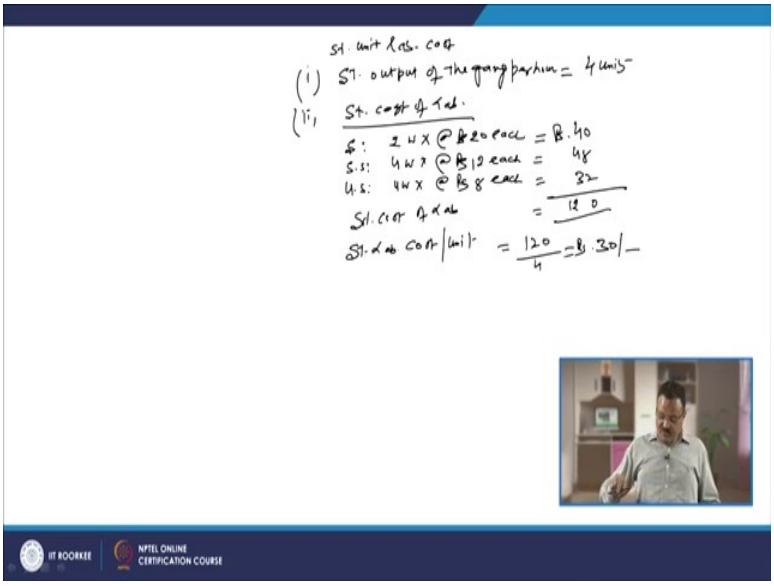

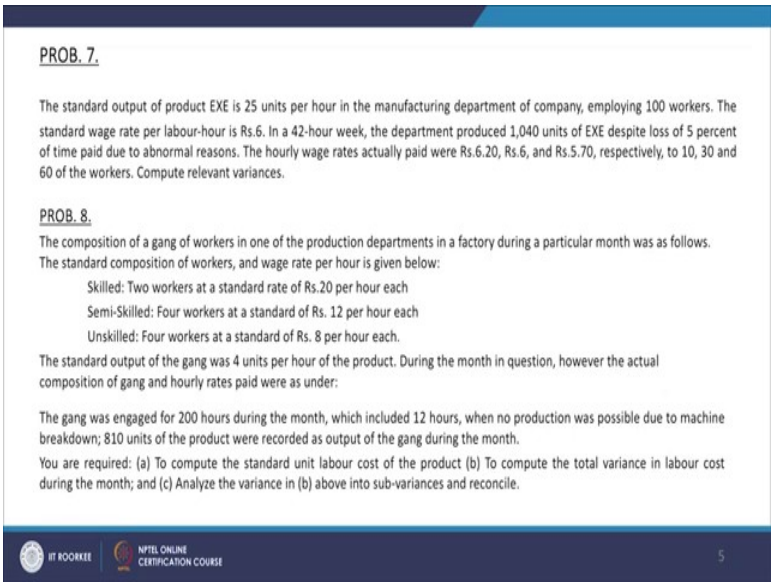

The first information given to us in this case is, we will be means calculating the standard unit labour cost or labour cost per unit that is asked in the question to compute the standard unit labour costs of the product. So you can calculate the standard unit labour costs of the product, we are going to calculate is first information given to us is standard output. Standard output of the

gang, Standard output of the gang is equal to how much that is you can call it as per hour. Standard output of the gang means all the 10 workers per hour going to produce how many units, 4 units.

Number 2 second thing is now, what we have to do is that is a labour cost we have to calculate, that is the standard cost of the Labour. Standard cost of labour and for calculating the standard cost of the labour we have to now take here as skilled, then we have to take it as semi-skilled and then we have to take here as unskilled. What is skilled, number of workers, 2 workers?

And what is the rate we are going to pay to them, at the rate of rupees 20 each. So, it means you are paying how much, you are paying, 2 workers you are putting on the job, at the rate of 20 each you are paying, so this comes out as how much rupees 40, in case of the semi-skilled how many workers, 4 workers and we are paying at the rate of how much, rupees what is the rate the standard rate is 12 each.

So, this is the 48, this amount works out as 48 and then is unskilled, in case of the unskilled what is this 4 workers and we are paying at the rate of how much means standard rate we have identified or we have decided is 8, rupees 8 each. So, this is coming out as how much, this will work out as 32. So you can calculate as that standard cost of the labour is, standard cost of labour is how much, standard cost of the labour is 82, this is 0 and then it is 9312, so 120.

Standard cost of the labour is 20 and now the standard labour cost per unit, standard labour cost per unit is how many units are produced in one hour by the gang of the workers is 4, so you are dividing 120 by 4. So, it means standard labour cost per unit is rupees 30. This is rupees 30, standard unit Labour cost is rupees 30. So, it means we are able to find out, answer the first question that what is the standard cost, labour cost per unit is rupees 30.

We are producing 4 units per hour, means all these 10 people are producing 4 units per hour, right? And what is the standard cost for those 4 workers? Means the total if you talk about is that is the 40 the skilled, 48 for the semi-skilled and 32 for the unskilled. So total cost works out as

which we are talking about is the standard cost of the labour is 120 and when you talk about it means this output standard cost of the labour is 120 and then per our cost.

This cost is per hour and standard labour cost per unit is going to be because they are producing 4 units per hour, so it means 120 is the total cost per hour and the production per hour is 4 units so now the standard labour cost per unit, here you can say is that is a per unit of the labour is a 30 rupees standard per unit cost of the labour is 30 rupees so this is the first question. Now, the from this we will now be going further for calculating the different variances and first variance we will be calculating in this case will be labour cost various.

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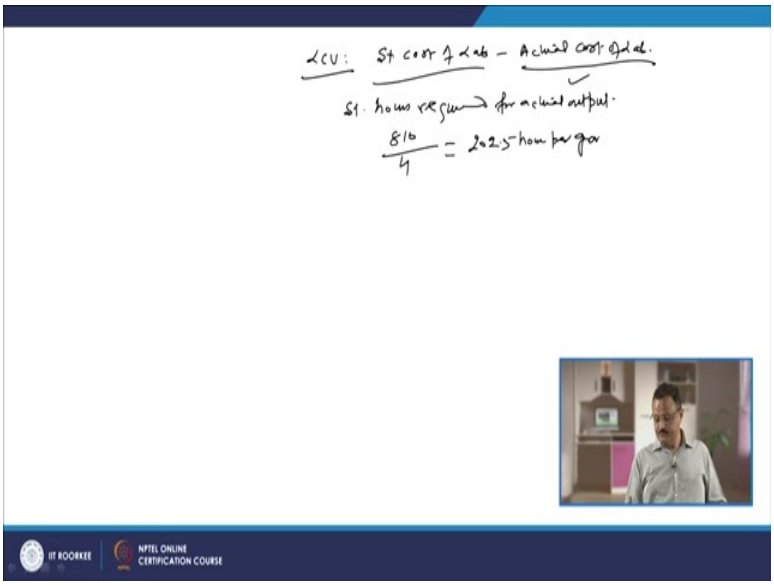

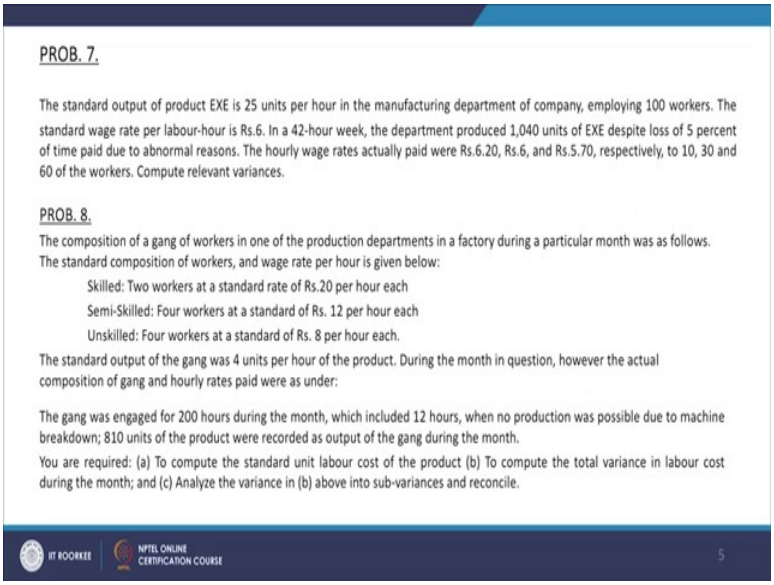

So, for calculating the labour cost various again, what you have to do is you have to find out the standard cost of labour minus actual cost of labour and in this case, we are given the actual cost of the labour actually is not a problem for us. If we look at this case here actual cost is not a problem because total number of hours are how many, total number of hours are 200 hours the labour has worked for and actual is how many workers we have involved, 2

So it will be, the first skilled will be the how many hours, the number of hours we have used the workers are 400 hours, in case of the semi-skilled, number of workers are three, we have again used them for 200 hours or paid them for 200 hours, so the semi-skilled workers the time is 600 hours and in case of the unskilled again 200 hours and we have used how many workers 5 workers, so the total actual time is 1000 hours so total number of actual hours for which the labour has been used is 2000.

And this is the one component and you multiply by the rate here, rate to given to us is 20, 14 10. It means if you multiply this 400, 600 and 1,000 by 20, 14, and 10 this will become the actual cost of the labour. So, this one component will be answered, that is the finding out this component, that is the actual cost of the labour is not difficult at all. But now the first one is the problem here. First one is the problem here because why the problem here is, calculating the

standard cost of the labour will be not very simple in this case, you have to rework it out.

Now why we have to rework it out because what was the standard production, if you put the labour for 200 hours together all these 10 workers for 200 hours, and what is output per hour 4 units. So, how much was the standard production expected to me? 800 units and but actually the production has been how much 810 units, so if you compare the 800 units of standard output with 810 units of actual output then variances are ought to be there.

So, in this case we have to readjust the standards we have to upscale the standards in the light of actual output, therefore, producing 800 units of the production our labour hours will be for skilled, semi-skilled and unskilled as a standard will be this much but for producing 810 units will be how much standard hours are required, how much standard hours for the semi-skilled, unskilled sorry here this how many, number of hours for the skilled, semi-skilled and unskilled are required so you have to upscale.

Because if you compare actual so what is going to happen, your actual performance is more than the standard performance, your variance is will be positive favourable, but you upscale, for example, we have not to produce 800 units, if we have to produce 810 units, then how much will be the standard labour cost, so you have to upscale that for upscaling that what you have to do here is, that is a standard hours required for actual output.

What you have to calculate here is that is the standard hours required for actual output? Standard hours required for the actual output are how much? In one hour how much is output that is 4 units. So, what is the total output? Standard hours required for actual output is 810 and this is 4, so how much it works out as 202.5 hours per gang worker, per gang workers are required. So, it means per gang worker is not supposed to work for 200 hours as we have seen that that was the actual standard was looking at this performance.

The standard was that 202.5 hours per gang workers were required, 202.5 hours per gang workers were required to be put in, the skilled people will also work for the 20 2.5 hours. Semi-

skilled people will also work for that 202.5 hours and unskilled people will also work for the 202.5 hours then the total output will be 810 units. Now, looking at this, you have to now revise the standards and then you have to calculate the standard cost.

Actual cost, calculating the actual cost is not difficult at all and then we will be comparing the standard cost with the actual cost and then we will try to find out still there is a variance or not because actual production is more, standard is less. So, if you compare these two 800 with the 810, variances are means ought to be there and maybe the variances can be positive.

So, first you upscale the standard that for producing 810 units of the final output how much man hours are required, total man hours are required and then you multiply by the standard rate and then you calculate the standard cost, actually information is given to us that is 400, 600 and 1,000 hours are given to us, rates are also given to us so then it will be possible. So, we have to compare or make it comparable.

This information we to make it comparable first and then to compare so for that we will have to prepare a proper table with regard to that standard information and the actual information on the one side will calculate the standard cost, on the other side we will calculate the actual cost and then we will try to find out the variance, that is a standard or you can call it as a labour cost variances, that is a difference between the standard cost of Labour minus actual cost of the labour.

And then we will see whether that variance is 0 or it is positive or it is negative and whatever the variance comes up is we will go for the further dissection of that by calculating the other variances LRPV, LEV and the further three variances including the labour idle time variance because problem of the idle time also there in this case, 12 hours have been wasted, 12 hours means 12 hours into 10 workers. So, it means out of standard hours we have wasted 120 hours.

So actual production has been or the productive time has been 1880 labour hours, so we will have to adjust for the labour idle time also and then calculate the variance is so we will have to

prepare this table and then we will have to go for calculating the variances. So, preparation of that table with regard to standard cost and actual cost and calculating LCB, I will be doing in the next class. Thank you very much!