Once again, welcome students for the 2nd. In the IT department. This is from my.
So in this session, what we want to do is we. Observation. About the properties of about
the definition of logarithms, and from that we will derive some more of the properties of
logarithms. Then we will really study properties of logarithms, which are laws of
logarithms, which will be helpful in solving problems. Solving many problems. In fact,
for the day-to-day purposes and it will give you a hold on any problem consisting of
logarithms and we will solve elementary problems based on our knowledge about the laws of
logarithms. This is what you're doing your days class,
So let's start. Exactly. Summarize some observations and properties. I am reiterating
these properties because they are very helpful in calculation in calculating many of the
logarithms for solving many problems related to Logan. This, you know long deliveries
area is equal to 1 and we quickly derived how to derive this log. Basically a is equal to
X. The seven lives in this to 1 equal to. It means it is hilarious. This means all the
students is equal to. This means it is to. Which place takes must be equal to? This
property is. Just using the wrong base 1 by 8. This something is equal to minus one. How
to do it? Again, it's very simple, it's long. One by 8K is equal to its. Place 1 by 8. X
is equal to. That means a raise to minus X is equal to a raise to one. That means X is
equal to minus. This property. One speed of one is equal to. For this. Basically. Exit.
These two X equal to 1, but one is raised to zero is 466. To be equal to. The last
property which. Because this is very personal and solving the problem. The next session
problems? Plus we are going to study laws of logarithms. Sometimes these laws are called
properties of. What this will be like? It's not. Are positive. We need one more
condition. Steve with these conditions. For the. Property. This property helps us to
simplify the calculations. Complicated. And you are right, it all functions and you can
still the product to the sum of the locks. But this is 1 property. Similarly, there will
be a property for division. Basically. This. These properties. This is. This property.
Properties. We have changed the face of the logarithm, sees any other phase of the
logger. Sees the basic terms satisfied. Patient this property is. You can see this as a
corollary of the first property, but still we will list it separately. Exposed. This
quarter. This is division. Some people call this as studies and the rule of the first
property and the rule that subscribes in Rule of law. Then this property is called change
of pace. It is this property allows us to change the place. These properties, and
naturally this property because I'm dealing with exponents, it is exponent laws of power.
Small. With all these properties they were trying. Plus they wanted examples of these
property. Human expensive. This doesn't include these. Forced with our multiplication.
Duplication law says that. It's taking long. Days. Product of 2. This is. This. I've
already given you something. Extensive. In order. On the right hand side is equal to X or
Y. Turn on PC. Thanks. Similarly, I have the. Now if I want to prove this property. The
cost. This is. Thieves. Makes across this communities there is. By this time, you should
be familiar with this.
So if there is to fix is equal. Why is equal? The differences between. Long ticket piece
of. Natural to take the product of.
So you might take the product. What will it be? According to this. Just quit. What is
clear is to. I will use the log indices and see that this is equal. Expressway. What I
got is. According to this. This is the exponent form of the expression. If I want to
convert this expression and the lock, what will I get my key space
So things will remain in place
So when I write log? This will be the base. This number will come on the left hand side
which is 4. This is equal. It's. But what was our assumption? What was our? Substituting
the value of. The base. That's not. Do you speak? See, we know. Face. You see this.
That's strong beliefs. Property. Suppose I have been given. Would you please? When I get
there. So. Few days. The details. This is the simplest demonstration of the property of
norms. No, this property. This property can be extended to any finite product. For
example. He's fine. Because. What will be the result? Please. Scale. It's. It's there. If
you want to derive it. We can actually use their own property. Decision. Parts one part
is the other part is. Discussed log speed. Could you please? This is clear on this. Apply
my first property. These two terms. And I will apply. Being the same property or
application log on the lake leads to this. We have the right. Any finite. Through this
division on the coast. I was. Please. You are entered by. It's equal to. This. Why does?
Forward now again. This. This. It's. Reading the schools, sorry. Expressions and then you
can be serious. It is too late. Those two things is equal to. Three days to go.

Interested in this kind of expression. Equal to. Ladies. By using logs, places which will be released. Because it is. This stupid queries to fix all areas to why is equal to a raise to X? 118 is. Plus in the soil. DVD's to fix in two days to minus one. Which is equal to. What we thought this NYC equal to? And they take the law on both sides for this form to exponential. I want to know this week. Base. It's not what. We see quarter two things. One this morning we also know. Tips is off to the PC of the light is off the face. Property. Absolutely. Working will this be? This. It is. Use the force. Please. Then I will use the product tool here. It's a combination. The product key and. Do spiders are not the expression? Type. Solve the problem of exchange office. Before that I have not given any example. You can actually look up something. The decrease. My name is Sophia. 15 you see. Decrease. Minus. Wireless did you face? This is the. Use of this property. To speak the third property. Change of pace. This pending. Do you have some complicated cases or you changed? The interface properties is that you find out. The deepest. Change the base of this. We're using. This is the key. In order to prove this property, you slightly. This is equivalent. Please stay on. This. See. It's equal. Now you notice. Here. Is in the. I want to be used. But as you, most of the properties can be. Cyberdrive 7. Life. How many? The third one was. It's important. Exploit the relationship between. In the face. This simply means. It is. Secret. Using. Serious too, why? You see? Those two the secret.

So these are the two questions. Not this year. This. To speak. This is because of the base. This being is because of the.

So I can substitute. E is equal to series 2 twice in this expert. See what they did. See this. What's my from this explanation? It's not. This is the case. What I am essentially saying? Using laws of exponents series two things. Is equal. At this time. Explain. Because if I say log. This. Speaks believe this? Is equal to.

So let us see some number. You see? Did you basically of this? Then I know this forces. Reading properties of exponential function and logarithmic. So. To see these forces week, we see that this is equivalent to say. You see this with the out of their valued tokens. So I've used this property. That's it. XY is equal to 0. Now let us go back and see what is X. Anxious. Substituting exist. This. The dog. Which is also equal. According to this express. Lock the device. That means. We're

So this is a change of base theorem which is made, which is really. Weather driving. Write this you will. Let me give one demonstration of. All I have. So. And I want to change the face. But I want this place to be

So that I will not get this. Then what I will do is instead of CI will put that on instead of C. In this formula I will put C to be equal to a in this. Then what I will get? Pretty please. Mixed race. Decision. But this is a new problem.

So if you want to change the face and if you want to make the base to be the. You want to be the base, then what you have. Property which. Which is. It's just. Is equal to. Degrees.

So change your face. Change the pace to the argument. This. Provided this satisfy all properties, both of them are not getting. The only problem comes when you have one here, So it is equal to 1 you are. Because you know the decrease it's of 1. According to our Formula blog. Peace. Thanks. This is a problem. Because this this particular thing is not. Changing the basis. You are coming across such a base, which is 1. The log function is not defined here. Xbox The last property that we are supposed to display. It's called power law. See what power company? Can you see this? Of multiplication, but that is only for teachers. Then we are behaving in order to. What property is quite forward? This. Interface. Again, we'll use a standard technique which is available. This big. Talk. The secret of things. Here I have to place to it

So I will use. Hello. Please do activities. Probably save this using seven days to fix. See. What they will do if I call this equation is star. We call this equation. I really missed the value of inspired and put that value in the world. To get. It is it's equal to. It is to fix the world is too.

So putting the value of. From stock.

So according to the office this which I have repeated frequently, this is nothing but the next. This is a race to enhance areas to why it's equal to raise to 10X. I know that exponential functions are well defined and they are one and two want to respect your domains,

So I also do that. Why must be equal to 6? But what is why? Substitute the value of oil from our post.

So what is why? Why is log? Base. Times. Please. This proves our power. This is what we are. We did some. It's a brief 20 years. I will give you one. We have been using. See when we are asked to find out the database. Of course what we have done. We have actually used A7 and we have written this four days to X is equal to four and then by inspection request the other tickets should be equal to 2. Instead of that you can actually write the doc. You sweat. If this isn't the case then I can is using this property. I can easily write this to be equal to four times log base two of. Repeatedly in the earlier lecture, this long to the base of is equal to 1. We can use that property and say that this. Demonstration of power. You were using power without actually going to power in earlier examples. We have seen many properties of that is no start. The course of problems and that is not start solving some problems.

So here is the first problem. Here. Wonderful. If you want to apply any law. Check for the face. On the basis. Free. Discuss. What is the problem nowadays these numbers are. This will not allow you to apply multiplication directly,

So what should apply first? You need to understand because there is a number you need to get the.

So you won't see. This. Please.

So the case? I want to use this. What is this song called Power Lock on the last? See if I want to use my power Now, this will be equal to log. Based. Six, please. Yes. Square. Minus. Hello. Please 5. Please. She was. I can use the quality application as well as the division together. Application now. These two laws building here. Before doing that, what is sqrt? 3636 is a perfect square,

So this will be long. The debate, the first since I am using the multiplication. Bracket. What should be the first number 636 is a perfect square sqrt. 36 will be 6. 7 squared, you know what is 7? ^2 7 squared is 43. Because this is a minus sign, I will get this number. This is 12. Simplified, because both were more. Square. Group of 40.

So what will this number? I want to simplify this more expensive with two of this, two gets cancelled, giving three in the numerator. Because of six, the log of five. This to me. Is a sips and now Route 3 is there

So this one here Route 3 and 40 million 649 square root of. This is what they want. Multiplication now. 2nd. See an example. What is inserted? The question of evaluate costs if you need to simplify the dog. If you look at this expression simply, what are the groups on here to think about? What are the rules of log that you can use for solving this problem?

So what are the rules of the block? At least their tops. So. Out of 25. It's 2154. Expression of the sport. They will lead power law. I have all the data,

So what? What is the thing that I need? I need multiplication. I don't need one. Percent. I think these two laws will suffice, and some properties of law that they have studied also.

So I just tried to solve this. Supposed to drop the device using post and cloud will be. Twice. To work for you. Wireless race. 6. Use of course. This is important. So. Basically. Talk to the police. There are two ways to happen. 1st, when this is playing and currently plays divisible by 5. 625 is also divisible by question that I can ask is can I write 25? Is equal to π raised to X, which is our 7th. Now this would be your second nature would say that yes, we can write or else if you can write this form of power law which is. Why this? You know you notice 25 squared is 625,

So if 25 Pi square 625 will be 5 is 4. If you write this in this. President I'm saying that this is equal. Would you please? Life is or gone. Light base. 4. It is. Cool. Basically. This. Said this quantity. Play 4. 1. Quantity. Speed of 2 - 16, which is minus one. Which is. What are the what are the laws of logarithms that we have used only power law? We use power law to simplify this. You can actually solve this using the seven, but instead of using the seven, what we did is we used our lock and said that six point square. There are four power law yields to lock the place by 5. All come with the base value of five. Do we use the property draw with the base five of five is equal to 1. Somebody from Thursday. Very complicated expression which will again have to devaluate. Slightly. The question. Importing of course. For any value it will find 1 number. First we have to give you the rules that we can use for solving this problem.

So what? I have any questions, yes?

So I don't need you. Ohh what. Because there are many places. There are many reasons. So let us go step by step. Off the base of. Use of power. Escape. Do the following for 16 players. Please. This. 4. Now I am in a position. Who are the life? Position. All that

together, let's see something. Cities flocked to the pace that. Using application. So. 16 no. Or simply. The potion tool may not help. These stories being 24 and 18, I can express their particles of two, three and five, which I feel I can do in this case.

So let us try to do that. What is 16 in terms of 252 raise to four? 60 what is 25? I'm just taking the decorator and similar things I will do for the 25 is nothing but five square. Facebook. Anything you know, his eyes, and that also means it is serious to four, three days to four. What is the job? Your skin will receive this three and two five,

So maybe the rate separately 3 raised to 60. Lyrics to 16 24. Put it into three. Also receive the students.

So you will get three raise. Today you're stupid. Is to create. School 3 27. Three days to 7. This also gives you folders and click five days you would rise to 7 into 5 days to 7. This. What is considered? Which again means it is we would respond more than two five days to. Just wanted to get used to. Using all the windows. It's just.

So it is. 16464 why? It is. Do you use to 60? Three years to 16 plus. 28 here. Why it is to 67 which is 16 + 7? School. 36 speak. 36 + 28.

So this the 36 + 28 some of. 64 yeah, I think we have done a nice job English to 64 ounces with this knowledge to 64 three days to 28 cancelled with this three days. It is 223 and five days to 24 will get cancelled and will lock the base. Wait? Reduced to very simple number that is based. Do we know what is to stop? To the base of all this. Sorry.

So. What we did is we first few quick observations we start. Then we have the laws of loyalty. 3 problems. Stating the properties of logic. Properties of logarithms to solve the. The only we have solved the problems on the form.

So in the next lecture, what we will do is we will more rigorously use the properties of law. In today's lecture I have not used two properties like change of pace. Property. Hope you had an interesting season. The next last night, once again, you saw some programs that demonstrate. Thank you for watching.