My office. Quite exciting. Victors. In the last lecture lecture. Everything is the product of scalar product. Which is which is a skill you know. We have seen the properties of this error product and

So we have done some problems based on that. Properties. Today's lecture we are going to see. You're perfect. Product also known as. And what are these properties only? How it is defined? Let's get it. What are the properties? I think this and that there will be some properties. Let's go to the. Something about. What is pretty much. See the. The coordinate system being made is 6 axis. That exists. And we call this system. Is that right? What it what we mean by right handed service if I. In the positive direction of the Axis origin. Rotate. Woods the positive direction that collapses. If some observer is looking from the Z axis in the positive direction of the Z axis. If that rotation is in the I cloud Constance. The rotation is the anticlockwise. We say that the system is director. Of course, all the coordinators. Right? What I mean that? Similarly, if I rotating the positive direction of the way access towards the positive direction of the Z axis which any observer is watching. For this, the rotation is in the sense. Yes. If I look at the opposite side they therefore this. OEM's. Yeah, for me that I've done that. This way it's always poison from the right under system of elections. Intended to solve. Let us see if I take the. If you sum up from the negative Z axis. Let me call it right. Observe what is observing. When the when the waves access is located towards the O axis then. It would be in the clockwise since

So therefore this voice. The left handed system this voice. Boy was that pretty. Is that right? It's a. We are interested. Of Americans, what they? What I mean by that is if, for example in general. That are like this, let's say. Let me call this. No. At this point more, let me consider that. Nobody there. I'm just considering the more general case how you look at the plane containing the vector ceiling and under. But that. OK, let me call it OC. No. Did you see this? You know this. Rotate. Good movie, any observers, observers. Putting this thing that rotation would be the article. Therefore in general is OA. And discussing payment right under system. That is, for the very observer resourcing in the opposite side that is. OK. We'll be hosting. Left handed. I've tried that. With this, and the system is interpreted by. Gonna take and say that. At the White Wolf, then you wanna you rotating from the vector towards the vector B. Then the school right under the right hundred school is called the standards. That would be advancing towards that direction. So that means that we are like the right order system of directions.

So that this understanding, let me just increase the the definition of the cross product. It's not a state. Nothing.

So that it is between them. Let's say this is the. That is the point, the point being. Let's say this. Get there, I'll be there. Device between zero and. There is supposed to protectors like this about this. It will be obvious. To discuss. This order. No party. You're close. Trust me. And the. But I say for an equal. Nicholas is equal to. Audio. They wouldn't. I just explained. I did the same. I know my sister lies between zero and five possible now that. This is a very difficult thing called the CRB. You know these are these body or we just see the similarity but totally. Yeah. At least that number, which is a number like 4. And consider can be negative. Where is this idea that is always? Let me say a few words on this, yeah. Is that? Sensitive. Cool. It's. The victory. Me. The same model in that order in this specific order. This former. Yeah, I got it. This is all directions. That is my system of directions,

So only that. Hopefully that book. It cost me for that inconvenience. Containing

So the definition of the first product is very clear. Trust me. Understanding it. Along with the FBI. Maybe? No. What is this another seller? What are the properties that is looking at? This is the immediate observations. Number one. As you said, apart from that, your number one is underneath. Let me again repeated this APN. Though the AB. Yes. Well. That I don't. Modulus. Because because of the hell it is. And what is this magnitude and what is its direction you want to go? And obviously they see across the model model the suffering because we. Is equal to mod. This is the user because this is a number. This is the number that is the product number. The numbers inside it. Society. 64

So this is the magnitude of the. What is it? More details you'll see later. Rather than imported observations, we see across B. Just. This is the vector AB and this is the number. Along the. Crosby is effective along this. In this direction, therefore, Class B is different. Is that the? These are the printers. But immediate observations now let us see. So. What's the geometric meaning of this? Tell me. No, that is. CNBC? Brother consider this. No, it must be knowing what is. It must be by definition. It is my model.

The area. Area. Basic. Space. Multiplied by the.
So again, what is the base here in this model? And what is the height? This is the height. And I think that this is that is actually. That therefore it is obviously this. This is a collection. This is being said and this other component which is equal to the market.
So this is Mark. Smart said the highest. Setting. What is it is exactly it is there. The definition of modernism. Press. Is equal to. The area of the body. It's version is addictive, particularly the plane containing and and its magnitude is the area that. Similar also you can say. I have a plan. OK, suppose a former. And then obviously the area of. Right, we know. Psycho like this is the beta. There. Does it say it's OK? 4 sectors. Like this? Also. What we do? Just the area of the trail. Because it doesn't save stuff. Must be the modulus of the area. The area of the triangle close at distance itself is going to say. Interpretation. That he brought the cross. Yeah. Noted to see some hope properties of this. Easy to see if one of the vectors is 0. Of the missing of his vehicle space. You see it. 070 0. Alright, in that case you trust me. Basically obvious because money is 0. Think of us. Defective product. The cross product of vehicles suppose. You can always see that this. We can we can put that request support this. Let's say this C and this is the. Know that operation. I can always place along the day along the direction of
So that Korea trust me. Becomes a 0 vector and C + b is equal. Let's see. Because here data is equal to be like this. Also some parallel material that are the same direction. Therefore. Because since data is equal. Let me see. Further definition. That right? Play some skillet. Alpha things. This would be always equal. Probably that. Is immediately the depression. In the model. Someone to discuss. It was. This also. Right? This property. Many important property. Trust me. Is equal to 676. Plus we are going here towards
So therefore the the direction is. I said that. Ohh man, I get it. Trust me this. He put. Because they will be supported. This is your interest. Modelist this is the. Play the subject.
So therefore. This was basically by saying that we have to quit. Play the speakers. The next day button properties.
So take the language like this. Cross product. BBC increment this that this is equal to a cross B. Plus that would find a subservicing matter. It was being the same. What is the definition of medium? But let us give a simple program later.
So right now we can assume that this was for the distributive property. What does? I don't know. Melissa. It's a property that connects dot product.
So you across the model is square. Is equal to what is worth 3 square? And the size. I just displayed. Now this is equal to what is for. B ^2. 1 minus Cos square Theta. What is there? Minus. What is one piece with? Posted. And we know that the air. Money. We need to.
So therefore the second term is that the square of the product of. The first product and the product. Following the morning. Important. To see it on. Some of their product. The product of this by itself. More and more. Using. This section of the property. There is some stuff for three vectors I can go for more than three vectors that is aircross. We must be. Just. By using the distributive property, then we can process this easy at first, see. Just saying. Because seeing. Just because. These are some immediate. Properties of this project and you know, we you. For this.
So this is this will be complete the first product.
So this. That makes giving the. Everything that you're doing this. Increasing the coordinates. Let us say, hey. Let's see it.
So I think that was it direction of the access.
So instead I don't right here, but.
So we don't like. I just said that. Alright, take care. My. Doing this.
So I could take care of that. Positive direction,
So they explained that access now's equal to the same way. Though they accuse me now, I can use this property. Might get property seven. Only four renters, supposing there are. Six years. That is the reason. No, he trust me. We observe such that as things about. 5%. Because. This morning in the morning. Between them zero because already we are senior. Crazy is equal to 0,
So there will be. Same things, take what's still missing. OK. But what had happened? This I. But that is that is that access. That's what it is being. Similarly, I did cross. I. Changed out of them

So you didn't understand. This one so. I. Would be. In this direction it's called this day and this is. That thing you do actors like. I is equal to J&J cross is suppose if I want the right eye cross scale. That it isn't. Equal to minus. Trust me.

So the transparent doesn't like this. You can see in that direction of that.

So it just gave me to the Microsoft. The site. And the other. Please.

So with this we can use the property 7. For the this. You trust me. Somebody or.

So these are all. So. Be one. See you. Yes. B. Plus don't be. This. Plus so. Say. And the. And

So you mean. Knowing that the diagonal thing would be 0. Early in the.

So that is different. Yes.

So this is equal to. Hey what? 013 Where does the? P3. You want. No, I can combine the items. Yeah. We want. Yes. Fortunately. Please get. Somebody. So. So.

So they say. But it's it's the. Let me take one simple example and let us take it. Escape. This thing right?

So you're gonna ask me? We found the determinant with the first one. Always. The components. 1. Freedom. It doesn't. So. 30 minutes. Minus. Similarly, verify that.

So obviously it is the arrows are insane I guess. The problem by the property of it will be the negative of this.

So let's see what. City. Because

So that's what it was. Now we know that they are. We know that it is 8 + 3 + 8 plus.

So to prove that. Since we have. Products that are we look at the let us say 8. We perceive you know, we perceive is simply by the tradition. It is simply the component. Right? Let's see. The same thing.

So this is what we need to see. By the. Expression can be seen here. Because of the determination. Received thank you. Difficult question. Second, probably the components of which are three. Second, the last. The second. See what? No property.

So I'm assuming that. Properties of the. 3. Do you want? See what? 2nd. This is what we want. Programs that. Because.

So we know that it is the unit vector.

So it is equal to. Divided by. Body. To be. You say? This. And the denominator is nothing but. The model is. You wouldn't. It's a particular to both the paint containing and, which is important to saying that this particular each of the. And also. The site. Can be given by. Trust me. But this is also. For example. Let us take it to me. What is 16 plus? By the. Like that? What's this? Movie. Really quick. Find the.

So far.

So here is the thing. And then you have to take the moderates of that and we normalize everything. And we are different.

So this is. Which is the particular. Find that is equal to. That was really quick. Those. It wouldn't be modular.

So yeah, Cosby. The determinant. The conference 3 - 16. That competing 69%. Gorgeous like that. Square Square 16 Square is 756. 64 it is. So. 8. Is equal to. $1660.00 ordered by. Something. Already. The models of the models of the. We need those like this. Nobody here is. You can say you know. What is the father? Thought. The court. Music. The same thing. Or the subject? Types. So. Right?

So the data is exactly the same. So. You can try this. Some more. But suddenly?

So they could say. By the. Right? Important property. Relation between the cross product and the.

So what does it mean? That we did. Body. What do you want to do? But fight battles.

So what you're doing by the property that is the relation between the property. Because. Square is equal to. Please. Minus. Yeah, that.

So that's what it says. So. You trust me.

So borderless means. Spider. See some more problems. These are the properties of. For anything like this. ABC. Prove it. Can you cross? Yes. Being gross. C plus. Plus citrus. Saint Joseph so. See. Is obviously.

So just use the distributive property. Today because. Tracy

So some of the other types. 36 Yeah, this is right. I want to the next problem. Let us take 3 vectors. The implicit.

So as soon as you see the same people, see. Love. You know something. This. They say that this is. And then Mr. So. That means easy. Say this even the C is equal to 03. Immediately we can control that ABC. Percy website. Say something. Because me. Is equal to. We're the same person. Let me say this year, maybe it was easy. BC.

So it's offered. No, to prove that. Because. We know because this is a 0. I don't know I can use the distributive property and trust me. This. Because. Trust me, easy. Say
So by this on the address is the same as saying. Similarly. Multiplying monthly. Multiplayer. Similarly. Because. Zero gives. Because me is equal.
So that's what we want. Starting on the same cross product, we can see other problems have not just given. The problems will be. Some other teacher you will see in the other and other regions series for example. What is the area of OK
So we can find the site and then we can find the cross product and if the model is divided by two. Similarly all this weekend, but.
So we can play on these problems. And you'll see the properties. The new product called the current product. Properties everything. Thanks.