>> Okay, here you see a buffering system made up of two acids. Actually, they're both acids, if you notice, they both have hydrogen in them. But this is an acid. And this is the contingent base to this acid, okay? It's a polyprotic acid. Okay, so this is a buffering system. This system has a KA value of 6.2 times 10 to the negative 8. Now if we have these concentrations for both of the components, where they are both equal concentrations– .50 molar of the acid, and 0.5 molar of its contingent base, then what we would want you to do is calculate the PH of that buffering system, okay? What do you do? Well, the first thing you might want to do is write down the equation, okay? Here is your acid, and it's going to your base. You're given the KA. That means which are going to do is, you're going to take your acid, plus put it in water, have it dissociate into its contingent base, plus H30 plus, okay? That's your acid dissociation. Now once you've got your acid dissociation equation written, you can go ahead and write your acid dissociation constant expression. Remember that's going to be your products, this time this, and then divided by just the acid because water is in excess, so we're not going to count water in our expression here. So, when we set it up, this is what it looks like. Now what I've done here, is I just kind of moved things over a little bit. You still have the two products up here. You still have your reactant. But I kind of move them over so that we can actually compare the concentrations of these two components. These we've been given up here, okay? So, when we go ahead and plug in our numbers, here's the number for the KA value equals. Now look what happens. Both of these had concentrations of .50 molar. So, we have the .50 divided by .50. We know of any number of invited by itself is one. So, these are going to cancel out. We end up with now simply this number equals the concentration of hydronium ion. So, H30 plus equals 6.2 times 10 to the negative 8 molar. Now we can go ahead and use our calculator to find the negative log of this number, which turns out to be 7.21. So, the PH of this buffering system is going to be 7.21.