>> Diane Jewell: In this problem we're starting with ethylene. That's a gas. Reacting it with water as a gas in a reversible reaction to form ethanol as a gas, this is a reversible reaction as denoted by the two headed arrows there. And what we see here, we're being given information about the equilibrium concentrations. Equilibrium concentration of C2H4 is 0.020 molar. The water is 0.015 molar. And the question is what is the concentration at equilibrium for the product. One other piece of information they give us is the KC value, the equilibrium constant value. And it's going to be 9.0 times 10 to the 3rd power. So what I want you to do is just look at what we have here in the blue. We have KC equals. Here's our product divided by our two reactants multiplied together. This, in other words, is our equilibrium constant expression right here. Okay? What I've done here now in green is I've shown you how to rearrange. We have this. We have a value for this. And we have a value for this. We need to solve for this. And so we need to get that numerator isolated. So we want to get rid of these two, and move them to the other side of the equation by multiplying by both of these. So when we do, we're multiplying by C2H4. Those will cancel. Multiply them by water. That cancels. What we end up with now is both of these on the other side. We have C2H4 concentration times the concentration of water times the KC value equals the equilibrium constant. I'm sorry. The equilibrium concentration of the ethanol. Okay? So now we can go back and put our numbers in. This one goes to with this. So we've got the 0.202 – 0.020. Times the 0.015. And then times the KC value 9.0 times 10 to the 3rd power. You end up with 2.7 molar. Okay? Remember to put in that – the molar symbol for molarity because this is a concentration. These are already in molars, and so we're going to have molar for that one too. So our answer on this is 2.7 molar.