>> How many moles of chlorine gas in a 7.00-liter container will exude a pressure of 865-millimeters of mercury at 24-degrees C? Okay. Now let's take a look at what we have here. How many moles, moles is represented by the lowercase m of chlorine gas in a 7-liter container, that 7-liters represents the volume. Will exert a pressure of 865-millimeters of mercury. There's your pressure. At 24-degrees C. Here is your temperature. Okay. Notice now this time we don't have more than one volume. We don't have more than one pressure. We don't have more than one temperature. We only have one situation and that situation gives us all the different information we need to solve for one piece of information we don't need which is m. It says how many moles. So, we don't know how many moles we have. That's what we want it find out. So, we have pressure, we have volume, we have temperature which we've converted into Kelvin and we need to find out m. We know if we take those four parameters we can use the ideal gas all PV equals nRT to solve for any of those variables. The R in this situation is going to be 62.4-liters times millimeters of mercury over Kelvin times mole. We're using this one instead of our other amount for r because this one gives us units of millimeters of mercury and we need that to cancel out the millimeters of mercury in that variable right there. So, let's take a look now at PV equals nRT. We want to isolate n so we can solve for n. We need to get the R and the T over on to the left-hand side of the equation and so we'll do that by dividing both sides by RT. The Rs will cancel out, the Ts will cancel out. Leaves you with n equals PV over RT. Whichever right here. Now it's just a matter of taking our numbers and placing them in where they belong. If you look down here we've done that and we can go ahead and start canceling out units. Millimeters of mercury will cancel. Liters will cancel. And then also Kelvin will cancel. Leaves us with moles in the denominator of the denominator. Anytime you have something in the denominator of a denominator it puts that up into the numerator and so we end up with moles being our units for our answer. We do the math we end up with m, number of moles equals .327 moles of chlorine gas.