

>> Chemistry, Diane Jewell: Iron-59 has a half-life of 46 days. Starting with 18.0 g, how many grams of activity remain after 184 days? This is exactly the same type of problem as we had last time. We write down our information. We have our half-life of 46 days written as a conversion factor. And we have 18.0 g and 184 days. So again, looking at the conversion factor, neither of these units agrees with this unit here, grams, but it does agree with this one here. So we're going to go ahead and put these two together and that will be our first step. We've got our 184 days and then our conversion factor, 1 half-life over 46 days. Days are going to cancel. We end up with units of half-life: 184 divided by 46 gives us 4 half-lives, okay? So now we know how many half-lives we're going through. We're starting with the 18 g and we're going to divide it by 2, 4 times, or 2 to the 4th power – 2 to the 4th power is 16. So 18 divided by 16 gives us 1.13 g. If you go back and look, we do have three significant figures here, three significant figures here. I would not use this number to figure out significant figures here.