>> Iodine 131 is a beta emitter. Show the product, writing the balanced equation. OK, so we've written Iodine 131. Iodine on the periodic table has an atomic number of 53. It's an emitter, which means it's a decay again, we're writing in that way that it's different from our other problem and yet it means the same thing. A beta decay and a beta emitter is the same type of problem. So here's our decay. We go ahead and put that arrow in. Show our beta particle as being an electron plus the unknown product, which we're going to solve for. I want to point something out. It says write the balanced equation. You notice we're not taking an inventory on both sides and saying how many iodines we have and in this kind of a situation balanced is what we're actually doing here. We're balancing the numbers of mass and we're balancing the numbers of charge. And so that's what we're doing when it says here to balance it. So the mass numbers, the top ones, are 131 equals 0 plus x. OK, in other words x equals 131. Bottom numbers again, be careful, 53 equals negative 1 plus y. To get rid of that negative 1, we're adding 1 to both sides, 53 plus 1 is 54 equals y. So I put the 54 in the place of the y, the 131 for x. And we look on our periodic table for 54 and we find that that's xenon. Now I want to show you something else that you may or may not have noticed. The mass started out to be 131 and ended up to be 131. So the mass doesn't necessarily tell us what our element is. The only thing that really tells us that for sure is the bottom number, the atomic number.