

>> Change these numbers to standard form. Ok, we're going to be looking at one, two, three. We're looking at four of them. They're in scientific notation. We want to put them in standard form. This first one may sound familiar, 6.02×10^{23} . That is Avogadro's number. If I were to write that in standard form, I would need to move my decimal point to the right 23 places. Ok? So if I start doing that, I've gone one, two. Now if I keep going, I have to move it 21 more times. Each time I move it, I have to put a zero. So if I had started with it right here – Let's put it in here. Here we go. If I had started with it right here, it would have gone one, two, three, four, five, etc., until finally I would have ended up with 21 zeros after this two. You can see why we like to use scientific notation. It's a lot easier to use and you're less likely to make mistakes with your numbers. Ok? Here's another one. Six times 10 to the negative one. Ok? You notice there's no decimal point, but there's always an implied decimal point after the one's place. So in order to figure it out, we can go ahead and use this. We're moving it to the negative, it's to the negative one power, which means we're making a smaller number. The number has to be smaller than one, in other words. So whereas here it was to the positive 23rd power, making it a large number, this is to a negative number, which means we're going to move our decimal point to the left and make it a smaller number. We're moving it just one place. So it goes here. You end up with .6. Here's another one that has a negative exponent. This time the negative exponent is three, which means we're going to move that decimal point three times. So if we're starting here, it's going to go one, two. Uh-oh! We better put something in there. And then three. And we better put something in there too, and then here's the decimal point. So you would end up with .0047. Ok? So any time you do that jumping, if there's nothing to jump, you have to go ahead and put zeros in there. Same as I put zeros in here. I have to put zeros in here so I have place values to jump to. Ok, lastly, on this one we have 5.822×10^{-3} . Positive number tells us we're going to move this decimal point three places to the right. One, two, three. Notice this time I don't have to insert any zeros in order to move that three decimal places. My answer is simply 5,822. Ok, one other thing I want to mention. One of the things I asked you to get for this class is a calculator that does scientific notation. Scientific notation makes it a lot easier for you to do your problems. There's only one thing you have to be careful of is how your screen shows scientific notation. These are two different ways scientific notation is shown with a calculator. It could say six to the negative two power, or it could have six with a space and then negative two. Both of those mean the same thing, which is six times 10 to the negative second power. So if you get this on your screen, do not write that down because that is not correct scientific notation. You need to always write scientific notation as in coefficient times 10 to some power. So make sure that you've converted what your computer, or I'm sorry, your calculator says into what you know is the true form of scientific notation.