

## Chapter 17 - Calculations with Decimals

### Decimal multiplication 4 minutes and 37 seconds

Here are a couple of multiplications that involve decimal numbers. If you have to do multiplication with a decimal number involved, there's a simple trick-just don't do it! Do multiplication with whole numbers instead. So rather than multiply zero point eight by zero point six, I would rather multiply eight by six. Which is nice and easy-forty-eight. Ok now obviously not as simple as that. I've changed the nought point eight into eight and to do that you have to multiply by ten. To change the zero point six into six, you have to multiply by ten. I'm now going to change them back to the original numbers, if I do it one at a time, first of all we'll change the eight back to zero point eight and to do that, we have to undo the multiplication by ten, which means we divide by ten.

So if we divided that by ten, the answer, will be divided by ten and so now we have four point eight. Zero point eight times six equals four point eight. Ok, now let's err....change the six back to zero point six so we get the zero point eight multiplied by zero point six to do that I have to divide by ten again, to undo the effect of multiplying by ten that we had originally and the effect of that dividing by ten is to divide the answer by ten so the result is zero point four eight. Now I assume here you understand about dividing decimal numbers by ten, moving the decimal point as necessary. Ok. So that's the result for zero point eight multiplied by zero point six.

Now with this next one, seventeen multiplied by zero point zero one five, I'm going to start by multiplying seventeen by fifteen. Do that by whatever method you like umm....I can do that mentally, ten seventeens are a hundred and seventy, and five seventeens are eighty-five add those up, two hundred and fifty-five. Here we go, now what have I done to the original question? I multiplied that zero point zero one five by a thousand ok, so to get back to the original question, zero one five, I need to undo that by dividing by a thousand. Ok. And that means that the answer also gets divided by a thousand which means moving the decimal point three places and there we have the result. Two point, sorry, zero point two five, five. So that's the technique for multiplying

the decimal numbers, turn the question into a question with whole numbers and then however many times you had to multiply by ten in order to do that, undo it by dividing by ten or a hundred or a thousand or whatever.