Complex Fractions_p3

Thursday, January 19, 2012
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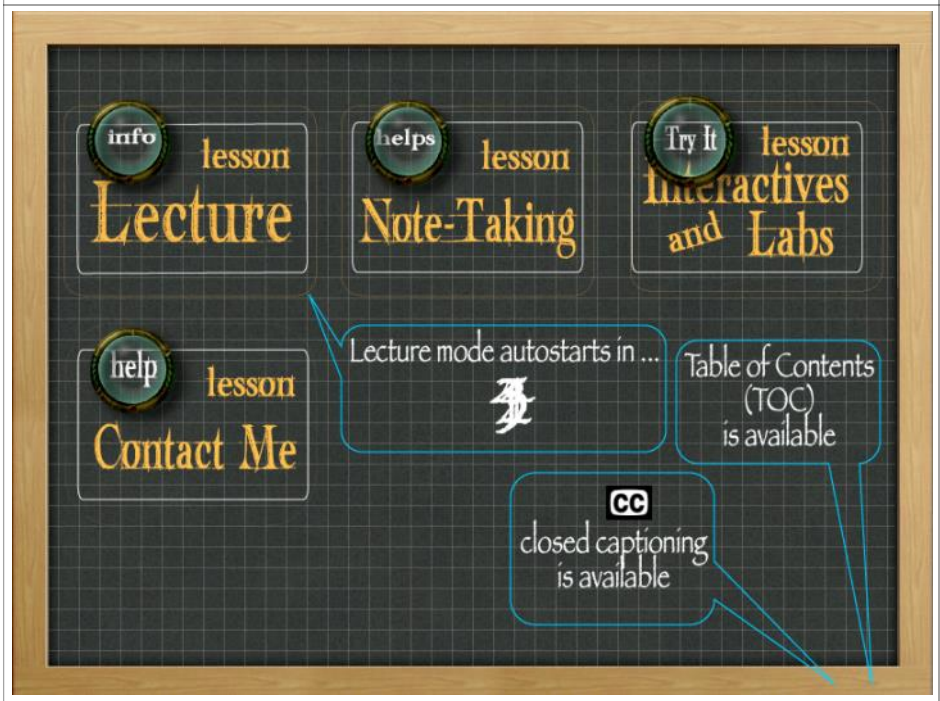
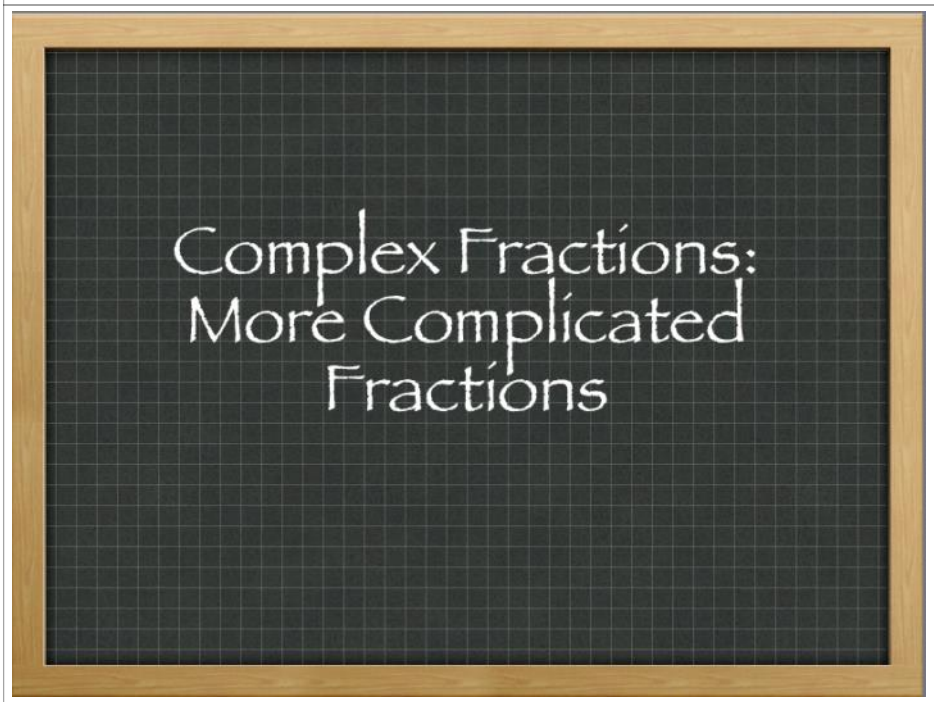
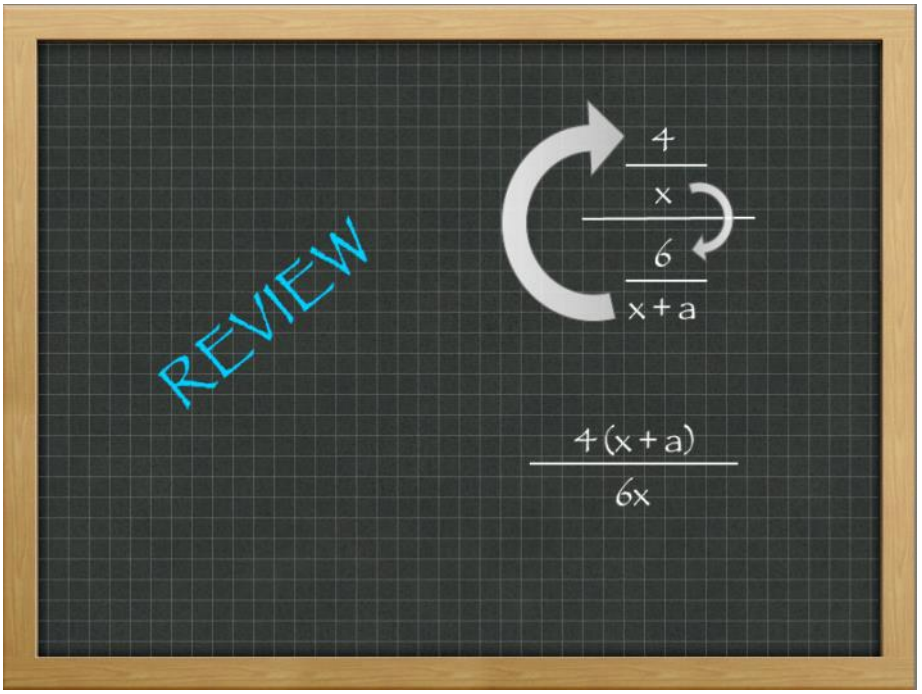
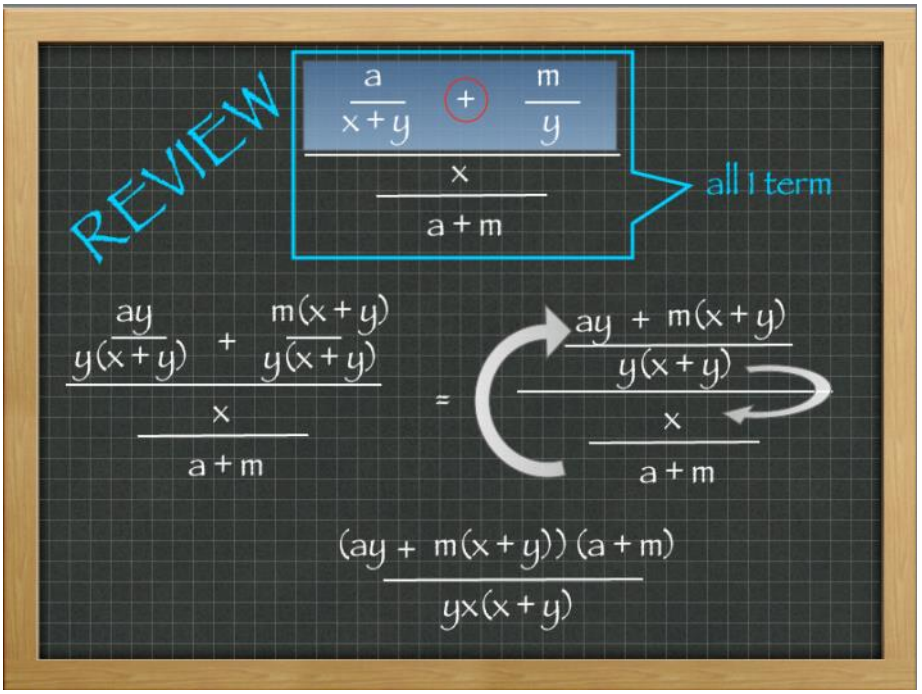
Slides	Notes
	
	
	We have already looked at complex fractions twice before. Each time we visit the topic, we are getting a layer deeper. Let's take a look where we have been first. When you were initially exposed to these

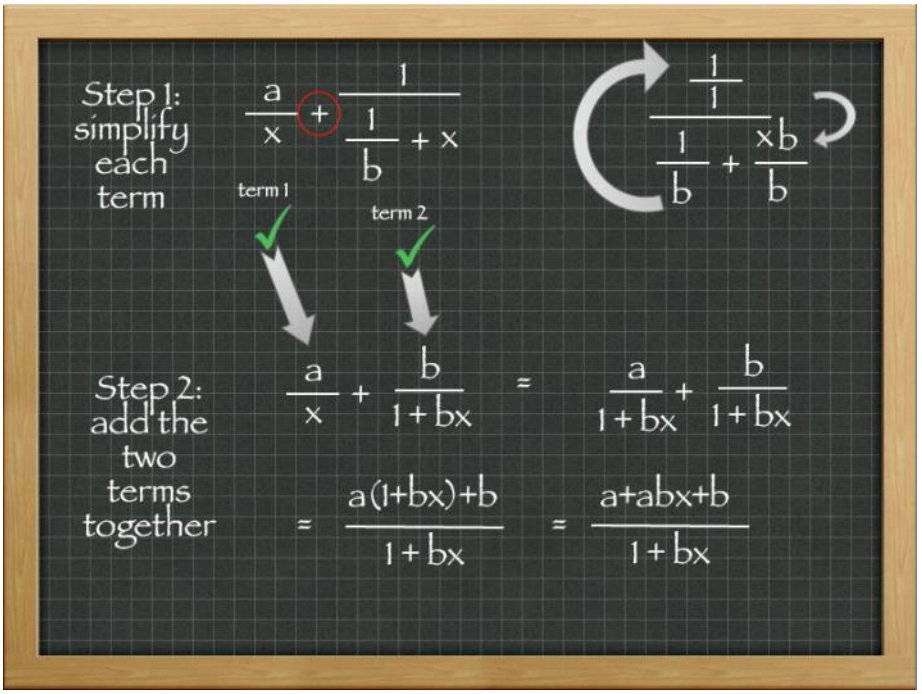


twice before. Each time we visit the topic, we are getting a layer deeper.

Let's take a look where we have been first. When you were initially exposed to these, you learned about the inside outside trick for simplifying these. In that you learned to multiply the numerator way at the top to the denominator way at the bottom and that became the new numerator. Then the middle two were multiplied to create the new denominator. This allowed you to get to a more simplified fraction.



The next layer deeper into the topic, you learned to deal with two terms in the numerator or denominator that needed to be added or subtracted first before you applied the inside outside trick.

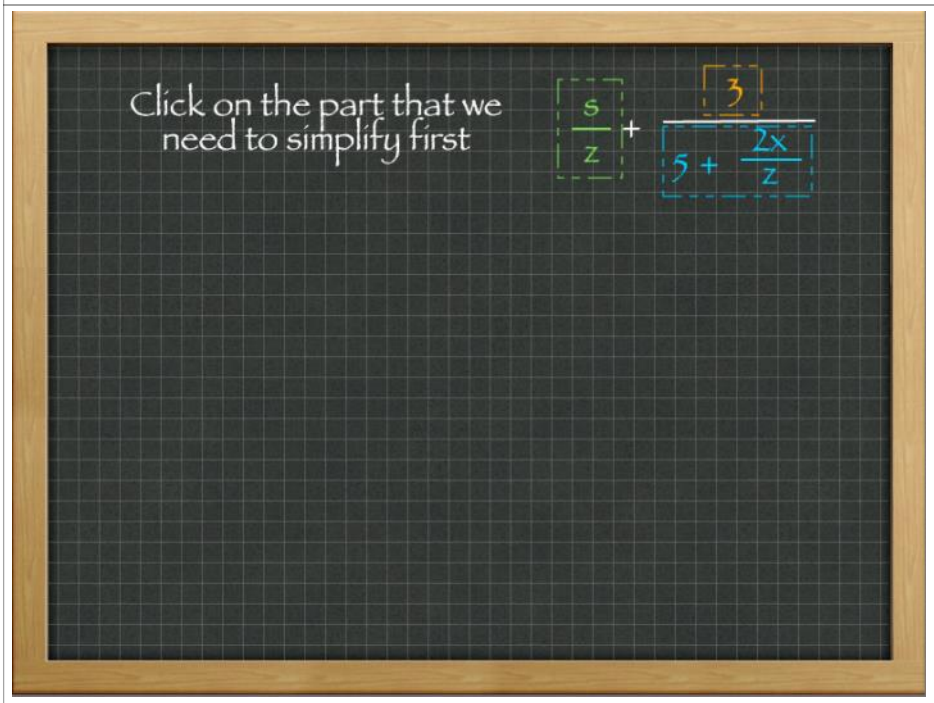


In this lesson, you will have two terms being added or subtracted, often with just one of the terms being a complex fraction.

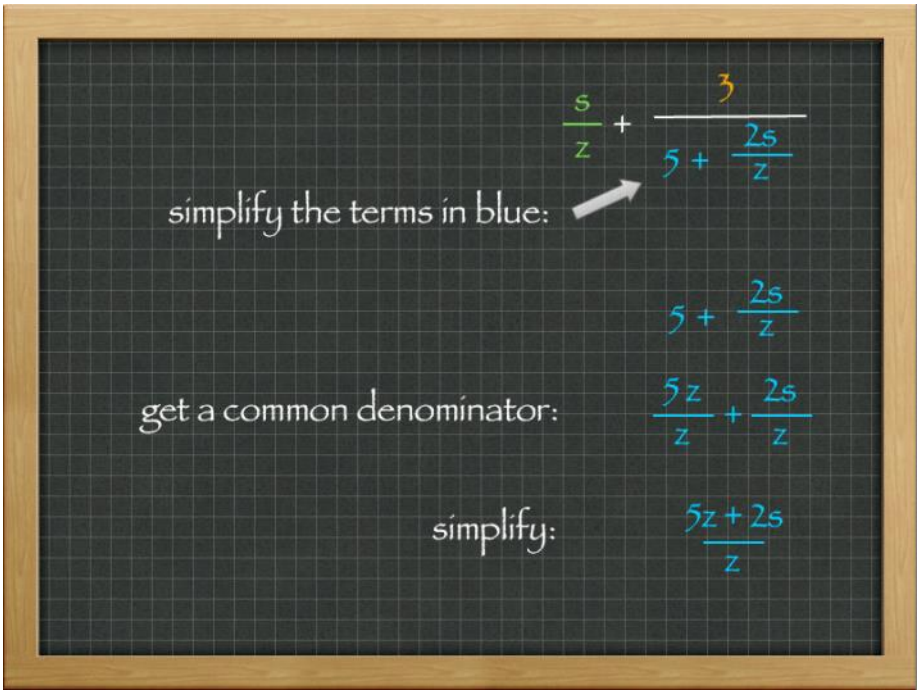
The a/x is already simplified, so let's just move it on ahead ready for a later step. We will focus on the second tem which is a complex fraction that needs to be simplified. We need to get the same denominators, in this case b. Then we can apply the inside outside trick.

Now that the second term is simplified, we can begin to focus on adding it to the first term. We find a common denominator, 1 + bx, and add the two terms together.

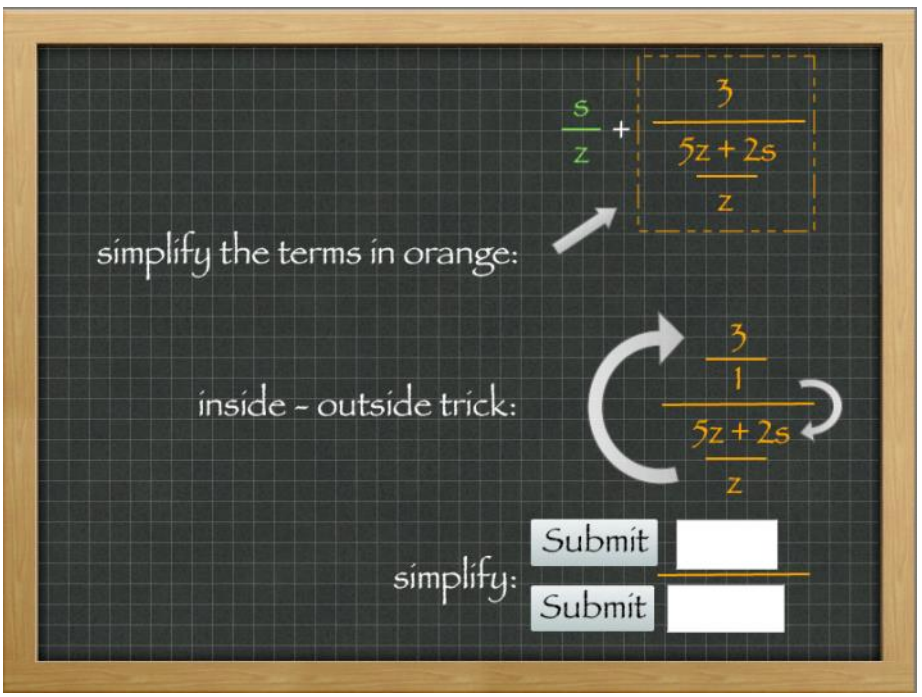
A common confusion students often have is when they can cancel and when they cannot cancel with fractions. You will note that we have a (1+bx) in the numerator and in the denominator. Some students will jump in and try to cancel these. You could have done that if everything outside of that only had multiplication in the numerator. That addition sign adding in the b throws a monkey-wrench in to cancelling. The only way you could have cancelled the denominator out with the 1+bx would have been if the numerator were something like a(1+bx)(b).



Now lets let you jump in for some of the parts of solving one of these. What part of this complex fraction needs to be simplified first?



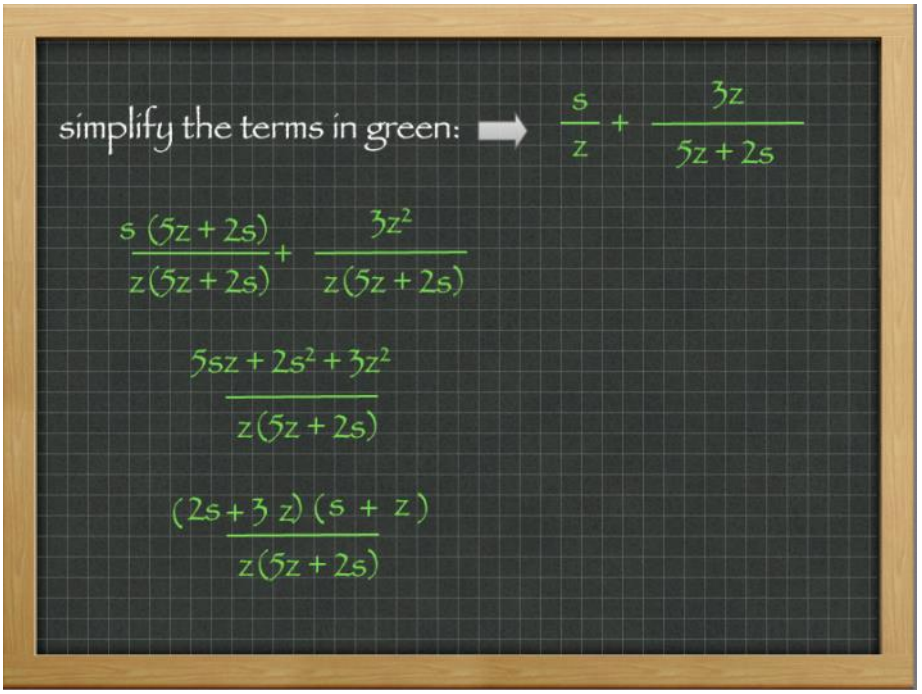
Let's tackle that section in blue. We are adding fractions, so we have to get a common denominator. Then we can simplify it and plug that back in to the original problem.



Now we will tackle the rest of that complex fraction.

We will apply the inside-outside trick. What will the new numerator be?

What will the new denominator be?


simplify the terms in green:
$\frac{s}{z} + \frac{3z}{5z+2s}$
$\frac{s(5z+2s)}{z(5z+2s)} + \frac{3z^2}{z(5z+2s)}$
$\frac{5sz+2s^2+3z^2}{z(5z+2s)}$
$\frac{(2s+3z)(s+z)}{z(5z+2s)}$


Congratulations!
You have completed
this topic.