

Addressing Misconceptions in Simplifying Rational Expressions

Part 1: For each scenario below, state whether you can or can not simplify as shown. Provide an example with numbers (don't choose 0 or ±1 for your variables) to prove your point and then explain your choice in your own words.

Scenario (circle yes or no)	Example with Numbers for Support	Explanation
$\frac{\cancel{x}}{\cancel{x}+1} = \frac{1}{1+1}$ <p align="center"><u>YES</u> or <u>NO</u></p>	$\frac{5}{5+1} \stackrel{?}{=} \frac{1}{1+1}$	
$\frac{\cancel{x}+1}{\cancel{x}} = \frac{1+1}{1}$ <p align="center"><u>YES</u> or <u>NO</u></p>		
$\frac{(\cancel{x}^2+2x+1)}{(\cancel{x}^2+4x-8)} = \frac{2x+1}{4x-8}$ <p align="center"><u>YES</u> or <u>NO</u></p>		
$\frac{(\cancel{x+1})}{(\cancel{x+1})x} = \frac{1}{x}$ <p align="center"><u>YES</u> or <u>NO</u></p>		
$\frac{x}{(\cancel{x+1})} + \frac{(\cancel{x+1})}{(x+2)} = \frac{x}{1} + \frac{1}{x+2}$ <p align="center"><u>YES</u> or <u>NO</u></p>		
$\frac{x}{(\cancel{x+1})} \cdot \frac{(\cancel{x+1})}{(x+2)} = \frac{x}{1} \cdot \frac{1}{x+2}$ <p align="center"><u>YES</u> or <u>NO</u></p>		

Part 2: Now, come up with two examples of your own (they can both work, both fail, or one of each). Then explain why they fail or work.

<u>Scenario</u> (circle yes or no)	<u>Example with Numbers for Support</u>	<u>Explanation</u>
YES or NO		
YES or NO		

Part 3: Finally, come up with a general rule/description for when you can simplify rational expressions. Write your rule/description below.

Now, go through the six scenarios on the front page and verify that if someone followed your rule, they would correctly simplify each rational expression.

<u>Scenario</u>	<u>Why Your Rule Works for This Scenario</u>
1	
2	
3	
4	
5	
6	