

Mar. 7, 2018

Sect. 6-5

Complex Fractions

LCD

Simplify

$$\begin{aligned}
 \frac{2|x|}{x|a|} &= \frac{2|x|}{x|a|} \cdot \frac{x|a|}{x|a|} \\
 &= \frac{2|x|}{x|a|} \cdot \frac{x|a|}{x|a|} \\
 &= \frac{2|x|}{x|a|}
 \end{aligned}$$

$$\frac{\frac{8}{n+1}}{\frac{4}{n-1}} = \frac{\overset{2}{\cancel{8}}}{n+1} \cdot \frac{n-1}{\cancel{4}_1}$$
$$= \frac{2(n-1)}{n+1}$$

$$\frac{1 + \frac{2}{x}}{4 - \frac{6}{x}}$$

No!

$1 + \frac{2}{x} \div 4 - \frac{6}{x}$

$$\frac{\frac{1}{1} + \frac{2}{x}}{\frac{4}{1} - \frac{6}{x}} \quad \text{LCD: } x$$

$$\frac{x \left(\frac{1}{1} \right) + x \left(\frac{2}{x} \right)}{x \left(\frac{4}{1} \right) - x \left(\frac{6}{x} \right)} = \frac{x+2}{4x-6} = \frac{x+2}{2(2x-3)}$$

$$\frac{\frac{7}{y}}{\frac{1}{4} + \frac{2}{y}} \quad \text{LCD: } 4y$$
$$\frac{4y \left(\frac{7}{y} \right)}{4y \left(\frac{1}{4} \right) + 4y \left(\frac{2}{y} \right)} = \frac{28}{y+8}$$

$$\frac{5 + \frac{1}{x-1}}{\frac{1}{x-1} - \frac{1}{4}} \quad \text{LCD: } (x-1)(4)$$

$$\frac{4(x-1)(5) + \frac{1}{\cancel{x-1}}(4)\cancel{(x-1)}}{4\cancel{(x-1)}\left(\frac{1}{\cancel{x-1}}\right) - \frac{1}{\cancel{4}}\cancel{(4)}(x-1)}$$

$$4(x-1)(5) + \frac{1}{\cancel{x-1}} (\cancel{4})(x-1)$$

$$\cancel{4(x-1)} \left(\frac{1}{\cancel{x-1}} \right) - \frac{1}{\cancel{4}} (\cancel{4})(x-1)$$

$$\frac{20(x-1) + 4}{4 - 1(x-1)} = \frac{20x - 20 + 4}{4 - x + 1} = \frac{20x - 16}{-x + 5}$$

$$\frac{20x-16}{-x+5}$$

Leave it

or ...

$$\frac{20x-16}{-(x-5)}$$

\Rightarrow

$$-\frac{20x-16}{x-5}$$