More Adding and Subtracting Rational Expressions...means more Common Denominators!

Ex 1: 
$$\frac{6x}{3x-1} \frac{4x}{2x+5}$$

to get a LCD, we must multiply the denominators together.

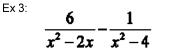
remember to change that minus to plus a negative 4x so it gets distributed properly.  $\left(\frac{2x+5}{2x+5}\right)\left(\frac{6x}{3x-1}\right) + \left(\frac{-4x}{2x+5}\right)\left(\frac{3x-1}{3x-1}\right)$ Don't forget domain restrictions  $\frac{12x^{2}+30x-12x^{2}+4x}{(2x+5)(3x-1)} = \frac{34x}{(2x+5)(3x-1)} \times 7$ 

Work for DR 2x+5≠0 2x ≠-5 7 7  $3x - 1 \neq 0$   $3x \neq 1$   $x \neq \frac{1}{3}$ 

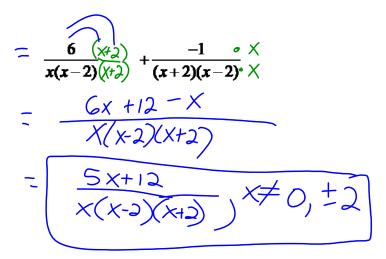
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Combine, simplify and state domain restrictions: ex.2  $\frac{15}{x^2+3x} \xrightarrow{x-2}{x+3}$  $= \frac{15}{\chi(x+3)} - (x-3) \cdot \frac{1}{\chi}$  $= \frac{15 - (x^{2} - 2x)}{x(x_{t} - 3)}$  $= \frac{15 - x^{2} + 2x}{x(x+3)}$ rearrange numerator =  $\frac{-x^{2} + 2x + 15}{x(x+3)}$  $factor -1 = \frac{-1(x^2 - 2x - 15)}{x(x + 3)}$  $= \frac{-1(x + 3)}{x(x + 3)}$  $\begin{array}{c}
-\frac{X-5}{X} \quad j \quad X \neq 0, -3 \\
\xrightarrow{\text{or}} \\
\frac{5-X}{X} \quad j \quad X \neq 0, -3
\end{array}$ 



 $\frac{6}{x^2 - 2x} - \frac{1}{x^2 - 4}$  Factor each denominator so we can see what the LCD is going to be.



Simplify each complex fraction.  $\frac{\mathbf{E} \mathbf{x} \mathbf{4} \cdot \mathbf{1}}{\mathbf{2}} = \frac{1}{4} \div \frac{2}{4}$  $= \frac{1}{4} \div \frac{2}{4}$  $= \frac{1}{4} \div \frac{2}{4}$  $=\frac{1}{4}\cdot\frac{9}{2}$ <u>y</u> 8 y≠0

## Simplify each complex fraction.

