

Thu 10-4-18

adding and subtracting fractions

ex) $12 - \frac{6}{x+4}$

$\frac{12}{1} - \frac{6}{x+4}$

* use the handy dandy method.

~~$\frac{12}{1} - \frac{6}{x+4}$~~ → $\frac{12(x+4) - 6(1)}{(1)(x+4)}$

$\frac{12x+42}{x+4}$

ex) $\frac{3}{x-2} - \frac{5}{2-x}$

* When denominators are the opposite follow these two steps.

steps

1) change its second denominator to its opposite.

$\frac{3}{x-2} - \frac{5}{x-2}$

2) change the sign between the fractions

$\frac{3}{x-2} + \frac{5}{x-2}$

$\frac{3}{x-2} + \frac{5}{x-2} = \frac{8}{x-2}$

ex) $\frac{1}{x^2-2x-3} - \frac{x}{x^2-9x+18}$

* when you have trinomials follow these two steps.

1) factor out denominator

$\frac{1}{(x-3)(x+1)} - \frac{x}{(x-6)(x-3)}$

2) Create Common denominators

$\frac{1}{(x-3)(x+1)(x-6)} - \frac{x(x+1)}{(x-6)(x-3)(x+1)}$

$\frac{(x-6) - x(x+1)}{(x-3)(x+1)(x-6)}$

$\frac{x-6 - x^2 - x}{(x-3)(x+1)(x-6)}$

$\frac{-6 - x^2}{(x-3)(x+1)(x-6)}$

Compound Fractions

ex) $\frac{x^2-4}{x^2+6x+9} \div \frac{x^2+7x+10}{x^2-9}$

$\frac{x^2-4}{x^2+6x+9} \div \frac{x^2+7x+10}{x^2-9} \rightarrow \frac{x^2-4}{x^2+6x+9} \cdot \frac{x^2-9}{x^2+7x+10}$

$\frac{(x-2)(x-3)(x+3)(x-3)}{(x+3)(x+3)(x+2)(x+5)}$ ← factor!

$\frac{(x-2)(x-3)}{(x+3)(x+5)}$