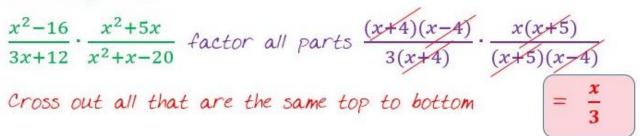
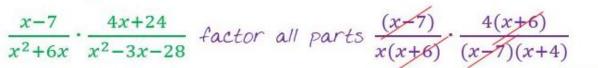


MULTIPLYING AND DIVIDING RATIOINAL EXPRESSIONS

Example 1:



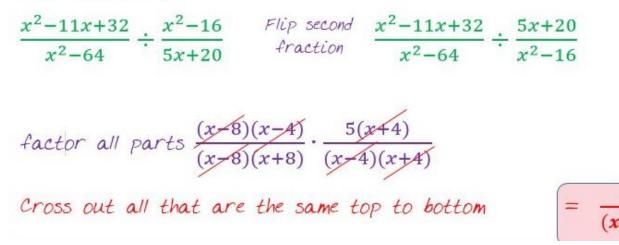
Example 2:



Cross out all that are the same top to bottom

$$= \frac{4}{x(x+4)}$$

Example 3:



ADDING AND SUBTRACTING RATIOINAL EXPRESSIONS

Example 1:	
$\frac{5}{x^2 - x - 30} + \frac{8^{(x+5)}}{x - 6}$	
(x-6)(x+5)	
$\frac{5}{(x-6)(x+5)} + \frac{8x+40}{(x-6)(x+5)} = \frac{8x+45}{(x-6)(x+5)}$	
Example 2:	
3x(x+5) 7x-2	
$\frac{1}{x+9} - \frac{1}{x^2+4x-45}$	
(x+9)(x-5)	
$\frac{3x^2 + 15x}{(x+9)(x-5)} - \frac{7x-2}{(x+9)(x-5)} = 3x^2 + 15x - 7x + 2 = \frac{3x^2 + 8x + 2}{(x+9)(x-5)}$	
Example 3: $x - 4^{(x-2)} x + 5^{(x+3)}$ $(x-4)(x-2) = x^2 - 2x - 4x + 8 = x^2 - 6x + 8$ $(x+5)(x+3) = x^2 + 3x + 5x + 15 = x^2 + 8x + 12$	
$\frac{x-4}{x+3} - \frac{x+5}{x-2}$ (x+5)(x+3) = x ² +3x+5x+15 = x ² +8x+15	>
$\frac{x^2 - 6x + 8}{(x+3)(x-2)} - \frac{x^2 + 8x + 15}{(x+3)(x-2)} = x^2 - 6x + 8 - x^2 - 8x - 15 = \frac{-14x - 7}{(x+3)(x-2)}$:)

SOLVING RATIOINAL EXPRESSIONS

Example 1:

 $\frac{4}{x-3} = \frac{8}{x^2-3x}$ Cross multiply $4(x^2-3x) = 8(x-3)$ $4x^2-12x = 8x - 12 \text{ move all to right}$ -8x $4x^2-20x + 12 = 0$ $4(x^2-4x + 3)$ (x-3)(x-4) x = 3, 4

Example 2:

 $\frac{4x}{2x} - \frac{6x}{3x} = 2$ 9 - 10 = 12x -1 = 12x $x = \frac{-1}{12}$