Complex FRACTIONS

$$\frac{\frac{1}{2} + \frac{2}{3}}{\frac{1}{5} + \frac{1}{2}} = \frac{\frac{3}{10} + \frac{4}{6}}{\frac{2}{10} + \frac{5}{10}} = \frac{\frac{7}{10}}{\frac{7}{10}} = \frac{\frac{5}{10}}{\frac{7}{10}} = \frac{5}{3}$$

$$\frac{(x-z)\chi}{(x-z)\chi+2} - \frac{3(x+z)}{\chi-2} \frac{\chi^2-2\chi-3\chi-6}{(\chi+z)(\chi-2)} = \frac{\chi^2-5\chi-6}{(\chi+z)(\chi-2)}$$

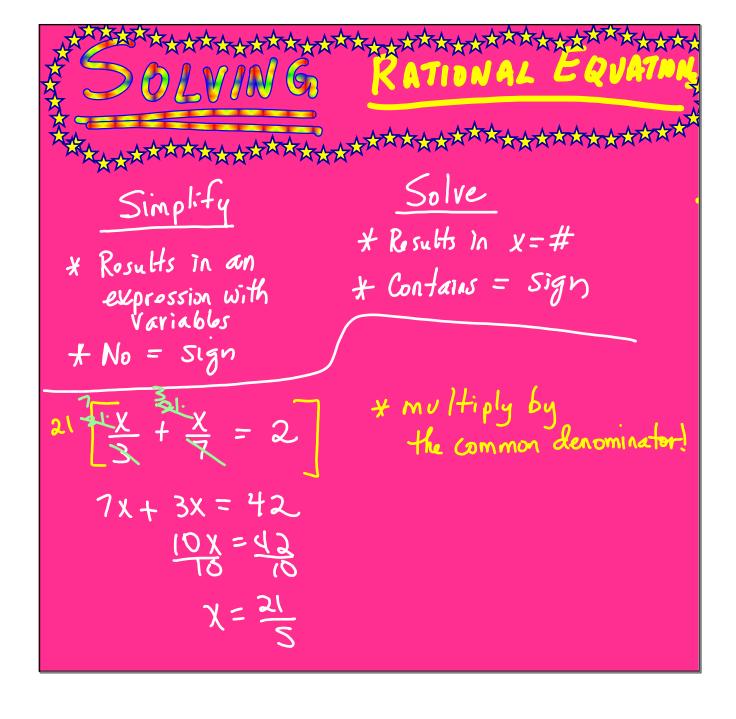
$$\frac{(x+z)\chi+2}{(\chi+z)(\chi-2)} = \frac{3\chi^2+9\chi+(\chi^2+4)}{\chi+3(\chi-2)} = \frac{\chi^2-5\chi-6}{(\chi+z)(\chi-2)}$$

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$$= \frac{\chi^2 - 5\chi - 6}{(\chi + \chi)(\chi - 2)} \cdot \frac{(\chi - \chi)(\chi + 3)}{2\chi^2 + 9\chi + 4}$$

$$= \frac{(X-6)(X+1)(X+3)}{(X+2)(X+4)}$$



$$\frac{\chi + 5}{\chi^{3} + \chi^{2}} - \frac{2}{\chi^{2} - 2\chi} = \frac{-3}{\chi^{2} - \chi - 2}$$

$$\frac{\chi + 5}{\chi^{2}(\chi + 1)} - \frac{2}{\chi(\chi + 2)} = \frac{-3}{(\chi + 1)(\chi - 2)}$$

$$(\chi + 5)(\chi - 2) - 2\chi(\chi + 1) = -3\chi^{2}$$

$$\chi^{2} - 2\chi + 5\chi - 10 - 2\chi^{2} - 2\chi = -3\chi^{2}$$

$$-\chi^{2} + \chi - 10 = 0$$

$$(2\chi + 5)(\chi - 2) = 0$$

$$\chi = \frac{-5}{2} \chi$$

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$$\chi = \frac{-3}{2} \chi$$

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1) Factor the denominators

2) Check for

excluded

Values

 $\chi \neq 0,-1,2$ 3) Multiply by

the common denom

+ concel all deron

4) Write down all terms that are left

5) Combine liketerns Set = 0, +

Solve

() Check for excludes

$$W + \frac{\omega + 7}{w^{2} - 3w^{-4}} = \frac{\omega^{2}}{w^{-4}}$$

$$(w+1) W + \frac{\omega + 7(w+1)}{(w+1)} = \frac{\omega^{2}}{w^{-4}} (w+1)$$

$$W(w-4)(w+1) + w+7 = w^{2}(w+1)$$

$$W(w^{2} - 3w^{-4}) + w+7 = w^{3} + w^{2}$$

$$w^{3} - 3w^{2} - 4w + w+7 = w^{3} + w^{2}$$

$$w^{2} - 3w^{2} - 3w + 7 = w^{3} + w^{2}$$

$$w^{2} - 3w^{2} - 3w + 7 = w^{3} + w^{2}$$

$$0 = 4w^{2} + 3w - 7$$

$$0 = (4w + 7)(w - 1)$$

$$W = -\frac{7}{4} \quad w = 1$$

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