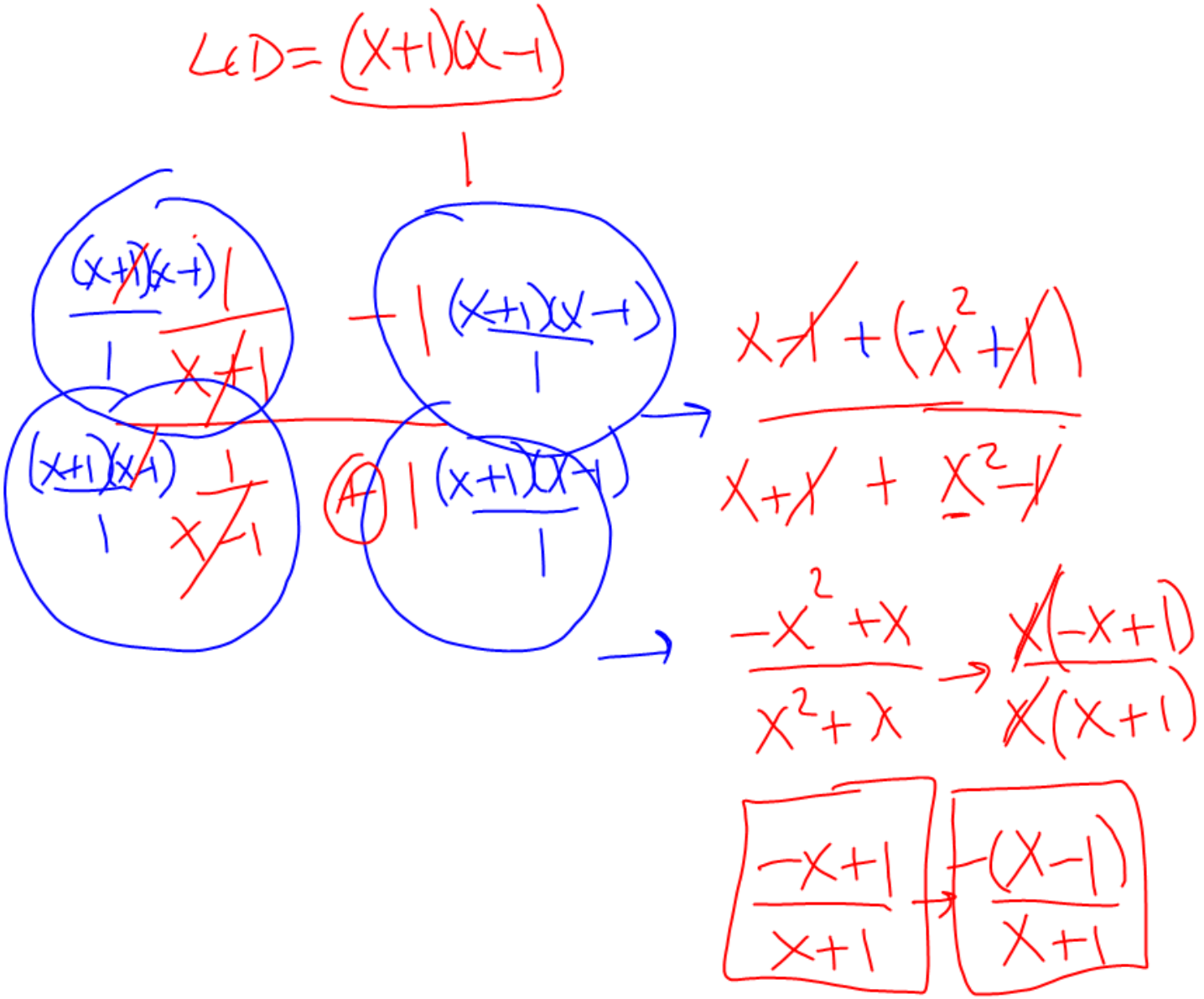
16. $\dfrac{\dfrac{1}{x+1}-1}{\dfrac{1}{x-1}+1}$

find the LCD



Simplify

27. $$\frac{\dfrac{4x}{x^2-4}-\dfrac{5}{x-2}}{\dfrac{2}{x-2}+\dfrac{3}{x+2}}$$

clicker = LCD = $\frac{(x+2)(x-2)}{1}$

$\frac{(x+2)(x-2)}{1}\cdot\frac{4x}{(x+2)(x-2)} + \frac{5}{x-2}\cdot\frac{(x+2)(x-2)}{1}$

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

$$\frac{4x-5(x+2)}{2(x+2)+3(x-2)} \rightarrow \frac{4x-5x-10}{2x+4+3x-6}$$

$$\rightarrow \boxed{\frac{-x-10}{5x-2}}$$

Simplify

29. $$\frac{\dfrac{2y}{y^2 + 4y + 3}}{\dfrac{1}{y + 3} + \dfrac{2}{y + 1}}$$

$\frac{2y}{(y+3)(y+1)} \div \frac{(y+3)(y+1)}{1}$

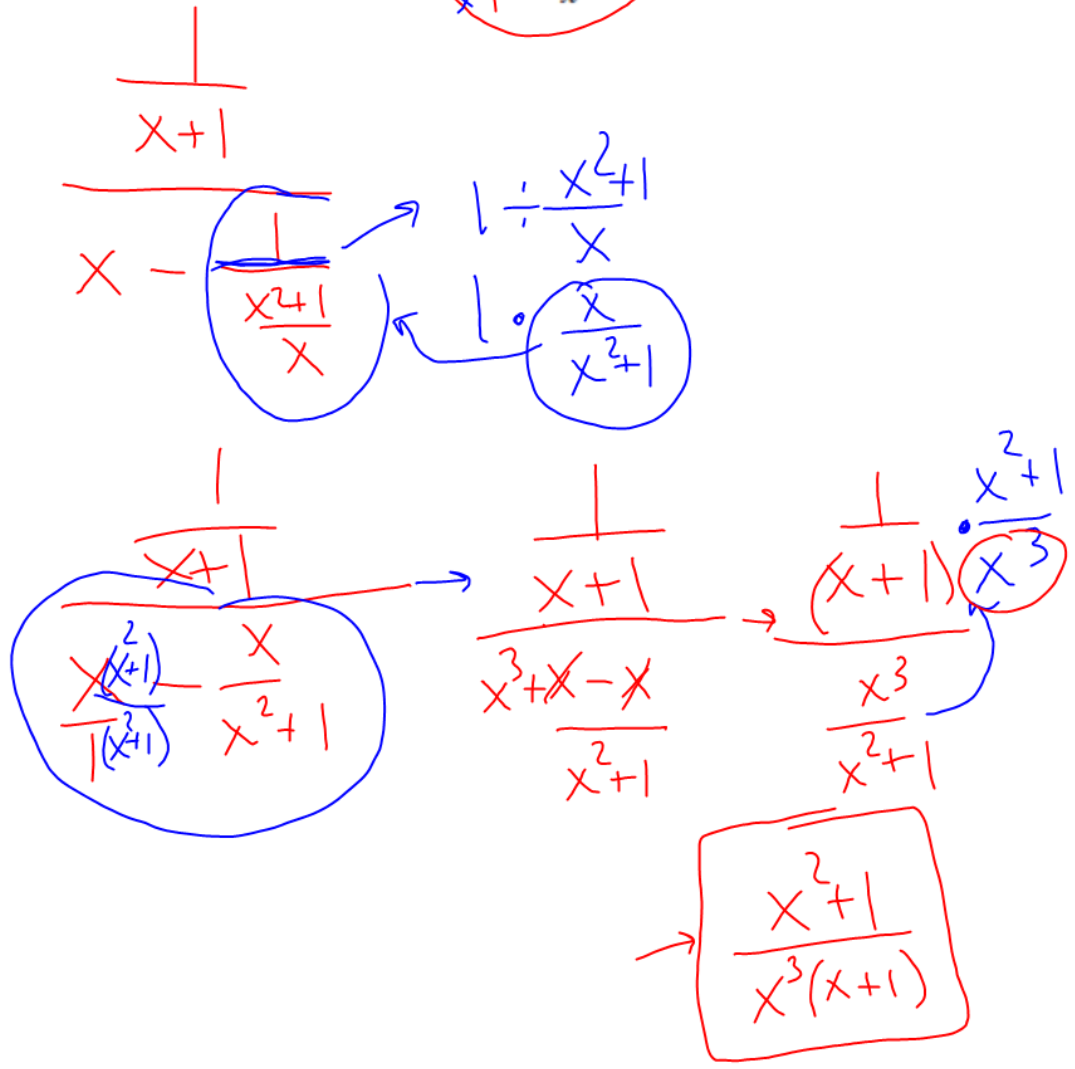
$\frac{1}{y+3} + \frac{2}{y+1} \cdot \frac{(y+3)(y+1)}{1}$

$\frac{1}{1} \cdot \frac{y+3}{1} + \frac{2}{y+1} \cdot \frac{(y+3)(y+1)}{1}$

$\rightarrow \frac{2y}{y+1 + 2y+6}$

$\frac{2y}{3y+7}$

42.
$$\cfrac{\cfrac{1}{x+1}}{x-\cfrac{1}{x+\cfrac{1}{x}}}$$



$$\frac{3x^{-2}y}{1\ 1\ 0} \rightarrow \frac{3y}{x^2}$$

26. $\dfrac{5a^{-1} - 2b^{-1}}{25a^{-2} - 4b^{-2}}$

$\dfrac{\frac{ab^2}{1}\frac{5}{a} - \frac{2}{b}\frac{a^2b^2}{1}}{\frac{a^4b^2}{1}\frac{25}{a^2} - \frac{4}{b^2}\frac{a^2b^3}{1}} \rightarrow \dfrac{5ab^2 - 2a^2b}{25b^2 - 4a^2}$

$\rightarrow \dfrac{ab(5b - 2a)}{(5b+2a)(5b-2a)} \rightarrow \dfrac{ab}{5b+2a}$

Simplify

8. $$\frac{12x^{-2} - 3x^{-1}}{15x^{-1} - 9x^{-2}}$$

$$\frac{\frac{12}{x^2} - \frac{3x^2}{x}}{\frac{15}{x} - \frac{9x^2}{x^2}} \cdot \frac{1}{1} \rightarrow \frac{12 - 3x}{15x - 9}$$

$$\frac{3(4-x)}{3(5x-3)}$$

Simplify:

18. $(x^{-1} + y^{-1})^{-1}$

$$\frac{\left(\frac{1}{x} + \frac{1}{y}\right)^{-1}}{1}$$

$$\frac{xy \cdot \frac{1}{\left(\frac{xy}{1}\cdot\frac{1}{x}\right) + \left(\frac{1}{\frac{xy}{y}}\cdot\frac{1}{1}\right)}}{}$$

$$\rightarrow \quad \frac{xy}{y + x}$$