Learning Target: **I can simplify rational expressions.**

U5-1

Simplify the expressions below.

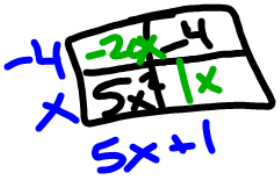
a. $\frac{x^2-8x+16}{5x^2-19x-4}$ for $x \neq -\frac{1}{5}$ or 4

b. $\frac{3x+15}{3x^2+16x+5}$ for $x \neq -5$ or $-\frac{1}{3}$

c. $\frac{(a-3)(2a-3)}{3(2a-3)} \div \frac{(a+5)(a-3)}{6(a+5)}$ for $a \neq -5, 3,$ or $\frac{3}{2}$

a. $\frac{(x-4)(x-4)}{(5x+1)(x-4)}$

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



b. $\frac{3(x+5)}{(x+5)(3x+1)}$

$= \frac{x+5}{x+5} \cdot \frac{3}{3x+1}$

$= \frac{3}{3x+1}$

$= \left(\frac{2a-3}{2a-3} \cdot \frac{a-3}{3}\right) \div \left(\frac{a+5}{a+5} \cdot \frac{a-3}{6}\right)$

$= \frac{a-3}{3} \div \frac{a-3}{6}$

$= \frac{a-3}{3} \cdot \frac{6}{a-3}$

$= \frac{a-3}{a-3} \cdot \frac{6}{3}$

$= \frac{3 \cdot 2}{3}$

$= 2$

Mastery Topic: **I can rewrite expressions and solve equations with integer and rational exponents.**

U5-10

Rewrite each expression in an equivalent form.

a. $\sqrt[7]{n}$ $= n^{\frac{1}{7}}$

b. $\frac{3}{y^5}$ $= 3 \cdot \frac{1}{y^5} = 3 \cdot y^{-5} = 3y^{-5}$

c. $\frac{-3}{a^{-2}}$

↳ $-3 \cdot \frac{1}{a^{-2}} = -3 \cdot a^2 = -3a^2$

$x^0 = 1$

$x^{-m} = \frac{1}{x^m}$

$\frac{1}{x^{-m}} = x^m$

$x^{\frac{m}{n}} = \sqrt[n]{x^m}$