Today's Learning Goal(s):

Date: Feb. 14/17
(Every lesson)

By the end of the class, I will be able to:

a) add or subtract rational expressions and state any restrictions.

2.7 Adding and Subtacting Rational Expressions Day 1

Ex.1 Simplify. State any restrictions on the variables.

a) $\frac{5}{6}+\frac{3}{4}$ LCD $= 12$

$= \frac{5}{6}\times\frac{2}{2}+\frac{3}{4}\times\frac{3}{3}$

$= \frac{10}{12}+\frac{9}{12}$

$= \frac{19}{12}$

b) $\frac{1}{3x}+\frac{3}{4y}$ LCD $= 12xy$

$= \frac{1}{3x}\times\frac{4y}{4y}+\frac{3}{4y}\times\frac{3x}{3x}$

$= \frac{4y}{12xy}+\frac{9x}{12xy}$

$= \frac{4y+9x}{12xy}$ R: $x\neq 0, y\neq 0$

Don't forget restrictions!

c) $\frac{1}{6x^2}-\frac{3}{8y}+\frac{5}{4xy}$ LCD $= 24x^2y$

$= \frac{1}{6x^2}\cdot\frac{4y}{4y}-\frac{3}{8y}\cdot\frac{3x^2}{3x^2}+\frac{5}{4xy}\cdot\frac{6x}{6x}$

$= \frac{4y-9x^2+30x}{24x^2y}$

R: $x\neq 0, y\neq 0$

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

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

$= \frac{5x+15-3x+6}{(x-2)(x+3)}$

$= \frac{2x+21}{(x-2)(x+3)}$

R: $x\neq 2, -3$

$x-2\neq 0$

$x\neq 2$

Simplify. State any restrictions on the variables.

e) $\frac{5}{4a-2} - \frac{7}{6a-3}$

$= \frac{5}{2(2a-1)} - \frac{7}{3(2a-1)}$ LCD $6(2a-1)$

$= \frac{5 \cdot 3}{2(2a-1) \cdot 3} - \frac{7 \cdot 2}{3(2a-1) \cdot 2}$

$= \frac{15-14}{6(2a-1)}$

$= \frac{1}{6(2a-1)}$

R: $2a-1 \neq 0$

$2a \neq 1$

$a \neq \frac{1}{2}$

Are there any Homework Questions you would like to see on the board?

Last day's work: pp. 122-123 #(4 – 7)ac, 8, 9, 11 [13]

Today's Homework Practice includes:

p. 128 #1 – 5

7a
9
6c ✓

6C) Kim

$$\frac{2x^2-x-1}{x^2-x-6} \times \frac{6x^2-5x+1}{8x^2+14x+5}$$

$$= \frac{(2x+1)(x-1)}{(x-3)(x+2)} \times \frac{(2x-1)(3x-1)}{(4x+5)(2x+1)}$$ ✓✓

$$= \frac{(x-1)(2x-1)(3x-1)}{(x-3)(x+2)(4x+5)}$$ R: $x \neq 3, -2, -\frac{5}{4}, -\frac{1}{2}$ ✓

7a) $\dfrac{x^2-5xy+4y^2}{x^2+3xy-28y^2} \times \dfrac{x^2+2xy+y^2}{x^2-y^2}$

$= \dfrac{(x-y)(x-4y)}{(x+7y)(x-4y)} \times \dfrac{(x+y)(x+y)}{(x-y)(x+y)}$ $\left.\begin{matrix}\\\\\\\end{matrix}\right\}$ $(x+y)^2$

$= \dfrac{x+y}{x+7y}$ R: $x \neq -7y, 4y, y, -y$ ($\pm y$)

9. $A = \frac{1}{2}bh$

$= \frac{1}{2}\left(\dfrac{4x^2}{x^2-16x+63}\right)\left(\dfrac{5x-35}{x-3}\right)$

$= \frac{1}{2}\left(\dfrac{4\cdot x^2}{(x-7)(x-9)} \cdot \dfrac{5(x-7)}{x-3}\right)$

$= \dfrac{10x^2}{(x-9)(x-3)}$ R: $x \neq 9, 3, 7$