

## 6.1 Adding/Subtracting Rational Expressions Day3:

### Problem 4 Simplifying a Complex Fraction

HW Day 3:

P. 539

5, 23, 27, 29,  
41 - 44 all

$$\frac{\frac{x}{x} \cdot \frac{3}{1} - \frac{3}{x}}{\frac{x}{x} \cdot \frac{1}{2} - \frac{1}{x} \cdot \frac{2}{2}} \rightarrow \frac{\frac{3x}{x} - \frac{3}{x}}{\frac{x}{2x} - \frac{2}{2x}} = \frac{3x-3}{x} \quad \text{and} \quad \frac{x-2}{2x}$$

$$\frac{3x-3}{x} \cdot \frac{2x}{x-2} = \frac{6x^2 - 6x}{x(x-2)} = \frac{6x(x-1)}{x(x-2)} = \boxed{\frac{6(x-1)}{x-2}}$$

### Problem 4 Simplifying a Complex Fraction

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

$$\frac{\frac{x^2+x-2}{x(x+1)}}{\frac{2x+4}{(x+1)(x-1)}} \rightsquigarrow \frac{\frac{(x+2)(x-1)}{x(x+1)} \cdot \frac{(x+1)(x-1)}{2(x+2)}}{1} = \boxed{\frac{(x-1)(x-1)}{2x}}$$

ANS. p.539 6.1 Day 3

23.  $\frac{15}{28}$

23.  $\frac{3x}{2 + xy}$

24.  $\frac{3}{x - 6}$

42.  $\frac{3x + 2y}{7x - 5y}$

46.  $\frac{2(x + 2)}{4x + 3}$

48.  $x$

5. error in dividing by the denominator:

$$\begin{aligned} \frac{1 + \frac{1}{x}}{\frac{3}{x}} &= \frac{x + 1}{x} \\ &= \frac{x + 1}{x} \cdot \frac{x}{3} \\ &= \frac{x + 1}{3} \end{aligned}$$

48.  $\frac{2(x + 5)}{x + 7}$