

## 6.3 Adding & Subtracting Rational Expressions

Warm-Up:  $\frac{1 \times 5}{2 \times 5} + \frac{3 \times 2}{5 \times 2} = \frac{5}{10} + \frac{6}{10} = \frac{11}{10}$

 = ?

Ex)  $\frac{2x+1}{x+3} - \frac{x-2}{x+3} = \frac{x+3}{x+3} = 1 \quad x \neq -3$

Read/try the examples on pg. 333. Q's?

Your Turn

a)  $\frac{-1}{n}, n \neq 0$     b)  $3, m \neq 3/4$     c)  $\frac{2x^2 - 7x - 5}{(x-3)(x+1)}$   
 $x \neq 3, -1$

$$\text{ex) } \frac{4}{p^2-1} + \frac{3}{p+1}$$

$$\frac{4}{(p-1)(p+1)} + \frac{3(p-1)}{(p+1)(p-1)}$$

$$= \frac{4+3(p-1)}{(p-1)(p+1)}$$

$$= \frac{4+3p-3}{(p-1)(p+1)}$$

$$= \frac{3p+1}{(p-1)(p+1)} \quad p \neq \pm 1$$

$$\text{ex) } \frac{x-1}{x^2+x-6} - \frac{x-2}{x^2+4x+3}$$

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

$$= \frac{x^2-1 - (x^2-4x+4)}{(x+1)(x+3)(x-2)}$$

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

$$\begin{aligned}
 \text{ex)} \quad \frac{\frac{2y-4}{y}}{\frac{y-4}{y}} &= \frac{2y-4}{y} \cdot \frac{y}{y-4} \\
 &= \frac{2y-4}{y} \cdot \frac{y}{y-4} \\
 &= \frac{2y-4}{y} \times \frac{\cancel{y}}{y-4} \\
 &= \frac{2(y-2)}{(y-2)(y+2)} = \frac{2}{y+2} \quad y \neq 0, \pm 2
 \end{aligned}$$

pg. 336-340

#1-7 (some), #8-10