

Name: _____

PAP Algebra II Explore: 9.1 Adding and Subtracting Rational Expressions

Simplify the following expressions, list any excluded values.

A. $\frac{2}{x} + \frac{3}{x} = \text{---}$

B. $\frac{4}{x+2} + \frac{5}{x+2} = \text{---}$

C. Given: $\frac{2}{x+3} + \frac{7}{x-1} = ?$

What is the first step in problem C? _____

For problem C, the common denominator is $(x + 3)(x - 1)$.

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

$$\frac{7}{x-1} \cdot \frac{\text{---}}{\text{---}} = \frac{\text{---}}{(x+3)(x-1)} \Rightarrow$$

What fraction could be multiplied that equals one and creates a common denominator?

Now that you have a common denominator, what is the resulting answer? (Make sure to list excluded values)

D. $\frac{3a}{2b^2c^3} + \frac{b}{6ac^2} =$

Calculate each sum or difference. Make sure to list the restrictions for the variable, and simplify when possible.

a. $\frac{5x - 6}{x^2 - 9} - \frac{4}{x - 3}$

b. $\frac{x - 7}{x^2 - 3x + 2} + \frac{4}{x^2 - 7x + 10}$

c. $\frac{2x - 5}{x} - \frac{4}{5x} - 4$

d. $\frac{3x - 5}{4x^2 + 12x + 9} + \frac{4}{2x + 3} - \frac{2x}{3}$