

Name: _____

Date: _____

4-3 COMBINING RATIONAL EXPRESSIONS WITH ADDITION AND SUBTRACTION HOMEWORK

FLUENCY

1. Combine each of the following using addition. Simplify your result whenever possible.

(a) $\frac{3x-1}{6} + \frac{2x+5}{9}$

(b) $\frac{x}{10} + \frac{1}{15x}$

(c) $\frac{3}{7x} + \frac{5}{14x^2}$

2. Combine and simplify each of the following. Note that each pair of fractions already has a common denominator.

(a) $\frac{3x+7}{x+2} + \frac{2x+3}{x+2}$

(b) $\frac{5x+2}{4x-12} - \frac{3x+8}{4x-12}$

(c) $\frac{6x^2-8x}{x^2-25} - \frac{4x^2+2x}{x^2-25}$

3. Combine each of the following using addition. Simplify your final answers.

(a) $\frac{x}{5x+25} + \frac{2x-3}{x^2-3x-40}$

(b) $\frac{x-4}{x^2-24x+128} + \frac{2}{x^2-12x+32}$



4. Which of the following represents the sum of $\frac{1}{x+1}$ and $\frac{1}{x-1}$?

(1) $\frac{2x}{x^2-1}$

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

(2) $\frac{1}{x}$

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

5. When the expressions $\frac{x^2-8x}{9-x^2}$ and $\frac{3x+6}{9-x^2}$ are added the result can be written as

(1) $\frac{x-5}{x-3}$

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

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

(4) $\frac{x+7}{x-3}$

6. Express each of the following differences in simplest form.

(a) $\frac{x+2}{x^2+4x-32} - \frac{4}{x^2-16}$

(b) $\frac{2x+3}{8x^2+6x+1} - \frac{3}{2x^2-x-1}$

7. When $\frac{7x+14}{3x+12}$ is subtracted from $\frac{2x-6}{3x+12}$ the result can be simplified to

(1) $-\frac{5}{3}$

(3) $\frac{10}{3}$

(2) $-\frac{2}{3}$

(4) $\frac{7}{3}$

