Name **Key**   Date _____ Pd _____

7.4 Adding/Subtracting/Multiplying/Dividing Rational Expressions & Complex Fractions DAY THREE CYU

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
LCD	1- 3	4 - 6	7
Domain restriction in interval notation	1 - 3	4 - 6	7
Adding rational expressions	2	8	7
Subtracting rational expressions	1	5, 6, 8	7, 9 – 11
Dividing rational expressions		8	9 – 11
Multiplying rational expressions		8	9 - 11
Complex Fractions			8 - 11

Find the sum or difference. Show all work to earn full credit. State the LCD and domain restriction. Simplify completely.

1. $\dfrac{9}{x+1} - \dfrac{2x}{x+1}$

$$\dfrac{-2x+9}{x+1}$$

LCD: $(x+1)$

D: $(-\infty, -1) \cup (-1, \infty)$

2. $\dfrac{3x^2}{x-8} + \dfrac{6x}{x-8}$

$$\dfrac{3x(x+2)}{x-8}$$

LCD: $x-8$

D: $(-\infty, 8) \cup (8, \infty)$

Find the LCD of the expression. Then state the domain restriction in interval notation.

3. $2x$ & $2x(x-5)$

LCD: $2x(x-5)$

D: $(-\infty, 0) \cup (0, 5) \cup (5, \infty)$

4. $9x^2 - 16$ & $3x^2 + x - 4$

LCD: $(3x+4)(3x-4)(x-1)$

D: $(-\infty, -\frac{4}{3}) \cup (-\frac{4}{3}, 1) \cup (1, \frac{4}{3}) \cup (\frac{4}{3}, \infty)$

Find the sum or difference. Show all work to earn full credit. State the LCD and domain restriction. Simplify completely.

5. $\dfrac{3}{x+4} - \dfrac{1}{x+6}$

$$\dfrac{2(x+7)}{(x+4)(x+6)}$$

LCD: $(x+4)(x+6)$

D: $(-\infty, -6) \cup (-6, -4) \cup (-4, \infty)$

6. $\dfrac{x^2-5}{x^2+5x-14} - \dfrac{x+3}{x+7}$

$$\dfrac{-x+1}{(x+7)(x-2)}$$

LCD: $(x+7)(x-2)$

D: $(-\infty, -7) \cup (-7, 2)$ $\cup (2, \infty)$

7. $\dfrac{x+3}{x^2-25} - \dfrac{x-1}{x-5} + \dfrac{3}{x+3}$

$$\dfrac{-x^3 - 3x^2 - x - 51}{(x+5)(x-5)(x+3)}$$

LCD: $(x+5)(x-5)(x+3)$

D: $(-\infty, -5) \cup (-5, -3) \cup (-3, 5)$ $\cup (5, \infty)$

Simplify the complex fraction. Assume all values are defined.

8. $\dfrac{\frac{x}{3}-6}{10+\frac{4}{x}}$

$$\dfrac{x(x-18)}{6(5x+2)}$$

9. $\dfrac{\frac{1}{2x-5}-\frac{7}{8x-20}}{\frac{x}{2x-5}}$

$$-\dfrac{3}{4x}$$

10. $\dfrac{\frac{1}{3x^2-3}}{\frac{5}{x+1}-\frac{x+4}{x^2-3x-4}}$

$$\dfrac{x-4}{12(x-6)(x-1)}$$

11. $\dfrac{\frac{3}{x-2}-\frac{6}{x^2-4}}{\frac{3}{x+2}+\frac{1}{x-2}}$

$$\dfrac{3x}{4(x-1)}$$

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*
Rate your mastery level!
How confident are you with the skills this CYU covered? Circle the score you would give yourself.

1	2	3	4	5	6	7	8
Basic		Intermediate			Advanced		Solved ALL!