Name Key   **Date** _____ **Pd** _____

Chapter 7 TEST REVIEW

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Direct, Inverse, & Joint Variation	1		
Constant of variation	1		
Writing variation equations	1		
Adding rational expressions		2, 10	11
Subtracting rational expressions		3	
Multiplying rational expressions	4	6	7
Complex Fractions	5	14	15
Finding an LCD		8	
Dividing rational expressions	9		
Domain restriction in interval notation		12	
Solving rational equations		13	

Put all your work on a separate sheet of paper.

7.1 Direct and Inverse Variation

1) Determine whether each data set represents an inverse variation, a direct variation or neither. Find k, constant of variation, when possible. Show all work. Plug values into the equations.

a)

x	y
3	5
6	14
8	21

neither

b)

x	y
6.5	8
13	4
104	.5

inverse

c)

x	y
5	30
8	48
12	72

direct

Consider the following rational expressions:

A: $\dfrac{x-2}{6}$ B: $\dfrac{5}{x^2}$ C: $\dfrac{x^2+4x-8}{30x}$

A+C 2. Use any combination of the above and create an **addition** problem. Find the simplified form.   2. $\dfrac{2x^2-3x-4}{15x}$

A−B 3. Use any combination of the above and create a **subtraction** problem. Find the simplified form. 3. $\dfrac{x^3-2x^2-30}{6x^2}$

BC 4. Use any combination of the above and create a **multiplication** problem. Find the simplified form. $\dfrac{x^2+4x-8}{6x^3}$

$\dfrac{A+C}{B}$ 5. Use any combination of the above and create a **complex fraction**. Find the simplified form. $\dfrac{2(2x^2-3x-4)}{x^2+4x-8}$

ABC 6. Find the **product** of all three of the above. Find the simplified form.

$$\dfrac{(x-2)(x^2+4x-8)}{36x^3}$$

7. Multiply and simplify: $\dfrac{3-12x^2}{2x^2-15x-8} \cdot \dfrac{x^2-5x-24}{8x^2-28x+12}$ $\dfrac{-3(x+3)}{4(x-3)}$

8. Find the LCD: $\dfrac{5}{6x^2-28x+16}$; $\dfrac{1}{3x^2-2x}$ $2x(3x-2)(x-4)$

9. Divide and simplify: $\dfrac{8x^2+6x-9}{25x^2-10x+1} \div \dfrac{4x^2+5x-6}{5x^2+9x-2}$ $\dfrac{(2x+3)}{(5x-1)}$

10. Add and simplify: $\dfrac{7x}{x-9}+\dfrac{3x}{9-x}$ $\dfrac{4x}{x-9}$

11. Add and simplify: $\dfrac{x}{x^2+3x-4}+\dfrac{4x}{x^2+7x+12}$ $\dfrac{x(5x-1)}{(x+4)(x+3)(x-1)}$

12. Find the domain in interval notation: $\dfrac{2x}{2x^2+3x-20}$ $(-\infty,-4)\cup(-4,\tfrac{5}{2})\cup(\tfrac{5}{2},\infty)$

13. Solve for x. $\dfrac{3x}{x^2+5x+6}+\dfrac{2}{x^2+x-2}=\dfrac{5x}{x^2+2x-3}$ $x=\tfrac{1}{2},-6$

14. Simplify: $\dfrac{\dfrac{4}{x-3}-\dfrac{2}{x+2}}{\dfrac{8}{x^2+6x+8}}$ $\dfrac{(x+7)(x+4)}{4(x-3)}$

15. Simplify: $\dfrac{\dfrac{6}{x+1}-\dfrac{4}{x+2}}{\dfrac{5}{x+2}-\dfrac{3}{x+1}}$ $\dfrac{2(x+4)}{2x-1}$

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!