

Secondary Math III  
Adding Rational Expressions  
Assignment 5.3

Name \_\_\_\_\_  
Period \_\_\_\_\_

*Determine the least common denominator (LCD) for each sum.*

1.  $\frac{1}{x-4} + \frac{2}{x}$

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

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

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

*Indicate the LCD and then find the sum. Factor and simplify answers if possible.  
List any restrictions for x.*

5.  $\frac{x}{3} + \frac{x+1}{15}$  LCD: \_\_\_\_\_

6.  $\frac{x^2-1}{4} + \frac{x+2}{2} + \frac{x}{8}$  LCD: \_\_\_\_\_

7.  $\frac{3}{x} + \frac{1}{x-1}$  LCD: \_\_\_\_\_

8.  $\frac{2}{x-2} + \frac{5}{x+3}$  LCD: \_\_\_\_\_

9.  $\frac{x}{x-2} + \frac{x+2}{x}$  LCD: \_\_\_\_\_

10.  $\frac{1}{x+3} + \frac{1}{x-3}$  LCD: \_\_\_\_\_

11.  $\frac{x+1}{x} + \frac{x-1}{x^2+x}$  LCD: \_\_\_\_\_

12.  $\frac{1}{x^2-4} + \frac{1}{x-2}$  LCD: \_\_\_\_\_

13.  $\frac{x}{x-4} + \frac{2}{x^2-16}$  LCD: \_\_\_\_\_

14.  $\frac{x}{x^2-8x+7} + \frac{2}{x-7}$  LCD: \_\_\_\_\_

15.  $1 + \frac{2}{x^2+4x}$  LCD: \_\_\_\_\_

16.  $\frac{1}{x-4} + \frac{x}{x^2-16} + \frac{2}{x+4}$  LCD: \_\_\_\_\_

17.  $\frac{x+1}{x^2-3x-4} + \frac{x+3}{x-2}$  (Hint: simplify the first fraction **before** you determine the LCD)

*Multiply or divide, as indicated. Simplify answers if possible. List any restrictions for x.*

18.  $\frac{2x^2-32}{x^2-10x+24} \cdot \frac{x^2-4x-12}{10x+20}$

19.  $\frac{x^2-6x}{2x+18} \div \frac{x-2}{8x+24} \cdot \frac{x^2+6x-16}{x^2-3x-18}$