Name:_____ Date:_____

PC: Adding and Subtracting Rational Expressions Ms. Loughran

Do Now:
Perform the indicated operation and simplify.

1. $\frac{k^2+4k}{k^2+6k+9} \cdot \frac{-k-3}{8k+32}$

2. $\frac{4u^2-100}{u-2} \div \frac{4u-20}{2u^2-u-6}$

Perform the indicated operation(s) and simplify.

1) $\frac{u-v}{8v} + \frac{6u-3v}{8v}$

2) $\frac{m-3n}{6m^3n} - \frac{m+3n}{6m^3n}$

3) $\frac{5}{a^2+3a+2} + \frac{5a+1}{a^2+3a+2}$

4) $\frac{5}{10n^2+16n+6} + \frac{n-6}{10n^2+16n+6}$

5) $\frac{r+6}{3r-6} + \frac{r+1}{3r-6}$

6) $\frac{x+2}{2x^2+13x+20} - \frac{x+3}{2x^2+13x+20}$

7) $\frac{6}{x-1} - \frac{5x}{4}$

8) $6 - \frac{x+5}{(7x-5)(x+4)}$

9) $\frac{3}{x+7} + \frac{4}{x-8}$

10) $\frac{3}{4v^2+4v} - \frac{7}{2}$

11) $\frac{7}{3} - \frac{8}{12x-8}$

12) $\frac{5}{n+5} + \frac{4n}{2n+6}$

13) $\frac{2x}{5x+4} + \frac{6x}{2x+3}$

14) $\frac{2}{3x^2+12x} + \frac{8}{2x}$

15) $\frac{7n}{n+1} + \frac{8}{n-7}$

16) $\frac{2}{n+8} + \frac{4}{n+1}$

17) $\frac{3}{8} - \frac{3}{3x+4}$

18) $\frac{3}{b-8} + \frac{7}{b+3}$

19) $\frac{3}{x+6} + \frac{7}{x-2}$

20) $\frac{4}{x+1} - \frac{2}{x+2}$

21) $\frac{5n+5}{5n^2+35n-40} + \frac{7n}{3n}$

22) $\frac{3}{n-5} + \frac{6}{3n-8}$

CHALLENGE YOURSELF

23) Simplify: $\frac{a}{b} + \frac{c}{d}$

Steps for Adding Rational Expressions

When the denominators are the same

1. Keep the denominator the same.
2. Rewrite as one fraction by combining like terms
3. Factor.
4. Reduce.

When the denominators are not the same

1. Find The LCD
2. Rewrite each fraction with that common denominator
3. Combine like terms in the numerator and rewrite as a single fraction
4. Factor
5. Reduce.

To subtract, just change the subtraction to addition and negate the numerator that follows. Then you can follow the rules for addition.