Honors Math II
Unit 8 day 2 notes

Name_____
Period_____Date_____

What is $\frac{1}{5}+\frac{2}{5}$?

Adding rational expressions works the same way!

$$\frac{4}{2x}+\frac{3}{2x}=\frac{7}{2x}$$

This works because we already have a _____.

Practice adding rational expressions that already have a common denominator:

1. $\frac{x}{x+4}+\frac{3}{x+4}$

2. $\frac{3x}{x-2}-\frac{x}{x-2}$

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

Be sure to simplify your answer!

The Basic RULE for Adding and Subtracting Fractions:

Get a Common Denominator!

Examine the basic process:

Add: $\frac{1}{3}+\frac{3}{4}$

Get a common denominator - the smallest number that both denominators can divide **into** without remainders. In this case, the number is 12. To change the denominator of 3 into 12 requires multiplying by **4**. To change the denominator of 4 into 12 requires multiplying by **3**.

With each fraction, whatever is multiplied times the bottom must ALSO be multiplied times the top.

$$\frac{1}{3}\cdot\frac{4}{4}+\frac{3}{4}\cdot\frac{3}{3}$$

$$\frac{4}{12}+\frac{9}{12}=\frac{13}{12}$$

Practice adding rational expressions that already have unlike denominators:

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

5. $\frac{3}{x}-\frac{2}{x-5}$

6. $\dfrac{7}{x+4}-2$

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

8. $\dfrac{6x+4}{x-1}+\dfrac{5}{x^2-1}$

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

10. $\dfrac{7}{9x^2}+\dfrac{x}{3x^2+3x}$