Name: _____ Fraction Review (part 1)

Adding and subtracting '*like*' fractions:

When we add or subtract fractions, we want them to have the *same* denominator. (What do you think you would do if you wanted to add or subtract fractions that had different denominators?)

When you add or subtract fractions with '*like*' (the same) denominators, you add the numerators and keep the '*like*' denominator. Why?

After you have added (or subtracted), you can reduce your answer to an equivalent fraction and/or change it to a mixed number.

4/**9** + 8/**9** = 12/**9** = $1^{3}/_{\mathbf{9}}$ = $1^{1}/_{3}$ Why?

7/**10** – 3/**10** = 4/**10** = 2/5 Why?

1. Add or subtract. *Give you answer as a whole or mixed number, or as a fraction in simplest (reduced) form.*

3/8 + 7/8 = 9/16 + 3/16 =

11/12 – 5/12 = 9/10 – 1/10 =

Multiplying a fraction by a *whole* number:

When you multiply a fraction by a *whole* number, you multiply the numerator by the whole number and keep the same denominator. Why? Because multiplying by a *whole* number is just repeated addition.

3 x 1/**12** = 3/**12** = 1/4 Why?

6 x 4/**9** = 24/**9** = $1^{6}/_{\mathbf{9}}$ = $1^{2}/_{3}$ Why?

2. Multiply. *Give you answer as a whole or mixed number, or as a fraction in simplest (reduced) form.*

5 x 2/3 = 2 x 5/6 =

2 x 3/10 = 4 x 3/8 =

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Mixed numbers:

You can easily add or subtract mixed numbers by changing them to improper fractions.

You add and subtract improper fractions in the same way as proper fractions. (Remember that we want our fractions to have '*like*' denominators.)

When we're done we can reduce our answer or change it to a whole or mixed number.

3 ¾ + ¾ = 15/4 + 3/4 = 18/4 = 4 $^{2}/_{4}$ = 4 ½ Why?

3 – ¼ = 12/4 – 1/4 = 11/4 = 2 ¾

2 $^{1}/_{6}$ – 1 $^{5}/_{6}$ = 13/6 – 11/6 = 2/6 = 1/3

3. Add or Subtract by changing to improper fractions. *Give you answer as a whole or mixed number, or as a fraction in simplest (reduced) form.*

2 $^{5}/_{6}$ + 1 $^{5}/_{6}$ =

5 – 5/8 =

You can also add or subtract mixed numbers in parts. The fractional parts should have '*like*' denominators. Your final answer should have a fractional part less than 1.

6 8/9 + 1 2/9 = (6 + 1) + (8/9 + 2/9) = 7 10/9 = 8 1/9

4. Add in parts:

3 2/3 + 8 1/3 =

4 6/7 + 4 2/7 =

5 5/8 + 3 5/8 =

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You can also subtract in parts. But sometimes this requires *regrouping* or *renaming*.
Let's take a look at this again to make sure we remember how to do it.

Subtract: 3 2/6 – 1 5/6

In this problem we rename 3 2/6 as 2 8/6 so that we can subtract the fractional parts:

3 2/6 – 1 5/6

= (2 + 6/6 + 2/6) – 1 5/6

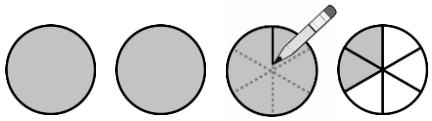
= 2 8/6 – 1 5/6

= (2 – 1) + (8/6 – 5/6) = 1 3/6 = 1½

2 8/6

$$\begin{array}{r} \cancel{3}\ \cancel{\frac{2}{6}} \\ -\ 1\ \frac{5}{6} \\ \hline 1\ \frac{3}{6} \end{array}$$

Subtract: **3 2/6 – 1 5/6**



At first, we have three whole circles and 2/6 more. Then we divide 1 of the whole circles into sixths. We end up with 2 whole circles and 8 sixths.

We say that 3 2/6 has been *renamed* (or *regrouped*) as 2 8/6. Now we can subtract 1 5/6 easily.

2 8/6 – 1 5/6 = 1 3/6 = 1 ½

5. Rewrite *in a column* and subtract:

3 6/7 – 2 2/7 =

3 2/7 – 2 6/7 =

7 2/9 – 2 4/9 =

3 4/9 – 8/9 =