

Name: \_\_\_\_\_

### Math Quiz Study Guide

Students should be able to add and subtract fractions and write equivalent fractions like the examples shown below.

If the denominators are not the same your job is to make them the same.

If there is a relationship between the denominators, change only one fraction.

If there is NOT a relationship, change both by multiplying them OR by finding the Lowest Common Denominator (LCD)

$$\frac{5}{9} + \frac{1}{3} \xrightarrow{\times 3} \frac{5}{9} + \frac{3}{9} = \frac{8}{9}$$

Example: Relationship  
(Change only 1 denominator)

$$\frac{1}{5} + \frac{3}{4} \xrightarrow{\begin{matrix} \times 4 \\ \times 5 \end{matrix}} \frac{4}{20} + \frac{15}{20} = \frac{19}{20}$$

Example: No Relationship  
(Multiply the denominators)

$$\frac{12}{14} - \frac{4}{7} \xrightarrow{\times 2} \frac{12}{14} - \frac{8}{14} = \frac{4}{14} = \frac{2}{7}$$

Example: Relationship  
(Change only 1 denominator)

Example: No Relationship  
(Find the LCD)

We could multiply 6 x 4 and use 24, but finding the LCD is easier.  
The LCD is 12.

$$\frac{4}{6} + \frac{1}{4} \xrightarrow{\begin{matrix} \times 2 \\ \times 3 \end{matrix}} \frac{8}{12} + \frac{3}{12} = \frac{11}{12}$$

	x1	x2	x3	x4	x5	x6
4	4	8	12	16	20	24
6	6	12	18	24	30	36

Matching equivalent fractions.  
If you can multiply or divide the numerator and the denominator by the SAME number, you have an equivalent fraction.

$$\frac{2}{3} \xrightarrow{\begin{matrix} \times 4 \\ \times 4 \end{matrix}} \frac{8}{12}$$

Equivalent

$$\frac{5}{6} \xrightarrow{\begin{matrix} \times 7 \\ \times 7 \end{matrix}} \frac{35}{42}$$

Equivalent

$$\frac{45}{81} \xrightarrow{\begin{matrix} \div 9 \\ \div 9 \end{matrix}} \frac{5}{9}$$

Equivalent

Adding Mixed Numbers.

Add the whole numbers. Then add the fractional parts. Remember, if the fractional parts become an **improper fraction**, you have to change it into a mixed number and add it to your existing whole numbers.

$$5 \frac{1}{4} + 4 \frac{6}{7}$$

Whole #'s:

$$5 + 4 = 9$$

Fractional parts:

$$\frac{1}{4} + \frac{6}{7} \xrightarrow{\begin{matrix} \times 7 \\ \times 4 \end{matrix}} \frac{7}{28} + \frac{24}{28} = \frac{31}{28} = 1 \frac{3}{28}$$

Improper to Mixed

$$9 + 1 \frac{3}{28} = 10 \frac{3}{28}$$