Study the following.

unlike- not the same (Joe's jacket is unlike Mary's.)

unlike fractions- fractions that have different denominators. Fractions that have different size pieces. (1/2 and 1/3 are unlike fractions.)

unlike denominators- denominators that are different numbers. (1/7 and 2/8 have unlike denominators.)

Write each definition in your own words.

unlike

unlike fractions

unlike denominators

Write two sentences using the word "unlike".
1.

2.

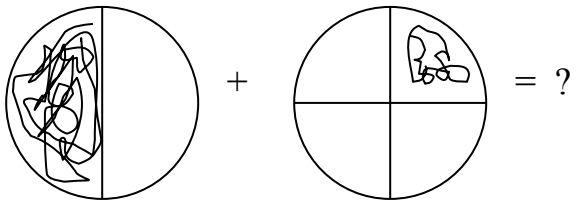
Write 4 pairs of unlike fractions.

Write 5 fractions that all have unlike denominators.

Study the following.

Fractions with unlike denominators cannot be added together since they mean different size pieces.

Example: 1/2 + 1/4 =



Halves and fourths are different sizes so you can't add them.

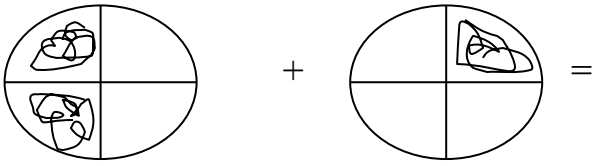
The solution is to change one or both fractions to the same size pieces (same denominator), and then add.

Change

1/2 to 2/4

$$\frac{1}{2} \times \frac{2}{2} = \frac{2}{4}$$

The problem is now $\frac{2}{4} + \frac{1}{4} =$



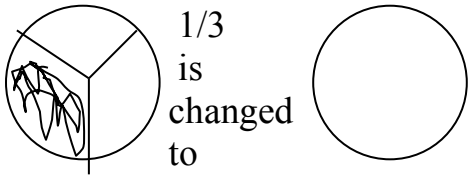
The denominators are the same (the pieces are the same size), so we can now add to get $\frac{3}{4}$

Solve, showing the steps indicated.

$\frac{1}{3} + \frac{1}{6} = ?$

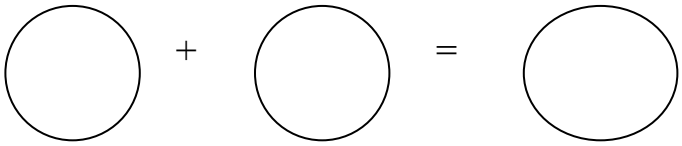
Step one. Change 1/3 to sixths.

$\frac{1}{3} \times \frac{\square}{\square} = \frac{\_\_\_\_}{\_\_\_\_}$



1/3 is changed to _____.

Step two. Add. _____ + _____ = _____



Show the following using the fraction cut-outs from Appendix B. Show how you change the fractions to the same denominator.
Solve.

1. $\frac{3}{8} + \frac{2}{4} =$

2. $\frac{1}{2} + \frac{1}{4} =$

Solve.

1. $\frac{1}{5} + \frac{3}{10} =$

(hint: change 5ths to 10ths)

2. $\frac{1}{8} + \frac{1}{2} =$

(hint: change halves to 8ths)

3. $\frac{4}{10} + \frac{5}{20} =$

(hint: change 10ths to 20ths)

4. $\frac{3}{14} + \frac{1}{7} =$

(hint: change 7ths to 14ths)

5. $\frac{1}{12} + \frac{2}{4} =$

(hint: change 4ths to 12ths)

Study the following.

To know which denominator you want to end up with, find the LCM (Least Common Multiple) of all the denominators.

Example 1:

$\frac{1}{3} + \frac{1}{6} =$

Multiples of 3: 3, 6, 9, 12, 15, 18…
Multiples of 6: 6, 12, 18…

LCM = 6
You want all denominators to be 6.

Change 1/3 to sixths. $\frac{1}{3} \times \frac{2}{2} = \frac{2}{6}$

Now add $\frac{2}{6} + \frac{1}{6} = \frac{3}{6}$

Reduce. $\frac{3}{6} \div \frac{3}{3} = \frac{1}{2}$

Answer: $\frac{1}{2}$

Example 2:

$\frac{1}{5} + \frac{2}{3} =$

Multiples of 3: 3, 6, 9, 12, 15, 18…
Multiples of 5: 5, 10, 15, 20, 25…

LCM = 15
You want all denominators to be 15.

Change 1/5 to 15ths. $\frac{1}{5} \times \frac{3}{3} = \frac{3}{15}$

Change 2/3 to 15ths. $\frac{2}{3} \times \frac{5}{5} = \frac{10}{15}$

Now add $\frac{3}{15} + \frac{10}{15} = \frac{13}{15}$

Answer: $\frac{13}{15}$

Solve. Show all steps.

$\frac{2}{6} + \frac{1}{4} =$

Multiples of 6:
Multiples of 4:
LCM =

Change the first fraction.

Change the second fraction.

Add.

Reduce if necessary.

Answer:

$\frac{2}{4} + \frac{5}{7} =$

Multiples of 4:
Multiples of 7:
LCM =

Change the first fraction.

Change the second fraction.

Add.

Reduce if necessary.

Answer:

Solve. Reduce if needed.

1. $\frac{3}{9} + \frac{1}{6}$

2. $\frac{1}{10} + \frac{1}{2}$

3. $\frac{3}{8} + \frac{1}{2}$

4. $\frac{2}{12} + \frac{3}{6}$

5. $\frac{2}{5} + \frac{1}{3}$

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

Solve these subtractions problems.

1. $\frac{1}{3} - \frac{1}{5}$

2. $\frac{4}{6} - \frac{1}{3}$

3. $\frac{9}{10} - \frac{3}{5}$

4. $\frac{4}{5} - \frac{2}{4}$

5. $\frac{8}{9} - \frac{1}{6}$

Make up 3 examples of addition of unlike fractions, and solve.

1.

2.

3.

Review. Solve the following. If you had trouble with any problems, go back and review that section.

1. $\frac{4}{4} =$

2. write an improper fraction

3. write a proper fraction

4. write a mixed fraction

5. change $2\ \frac{2}{5}$ to a proper fraction.

6. change $\frac{14}{3}$ to a mixed fraction.

7. Write 4 equivalent fractions for 2/3.

8. Reduce 3/9

9. Put in simplest form. 4/8

10. Change $\frac{1}{4}$ to $\frac{?}{16}$

11. $1/7 + 3/7 =$

12. $8/10 + 6/10 =$

13. $1/2 - 1/5 =$

Review Quiz.

1. $\frac{23}{23} =$

2. Change $\frac{10}{3}$ to a mixed fraction.

3. Change $4\ \frac{2}{5}$ to an improper fraction.

4. Write 3 equivalent fractions for 1/4.

5. Reduce $\frac{15}{20}$

6. Put in simplest form. $\frac{4}{12}$

7. Change $\frac{1}{6}$ to $\frac{?}{12}$

8. $\frac{1}{11} + \frac{3}{11} =$

9. $\frac{6}{9} - \frac{1}{9} =$

10. $\frac{2}{9} + \frac{1}{3} =$

11. $\frac{2}{3} - \frac{1}{4} =$

Study the following.

A fraction with a denominator of one is the same as just the numerator.

$\frac{4}{1} = 4$ because $4 \div 1 = 4$

Solve.

1. $\frac{6}{1} =$ _____ ÷ _____ = _____

2. $\frac{12}{1} =$ _____ ÷ _____ = _____

3. $\frac{15}{1} =$ _____ ÷ _____ = _____

4. $\frac{100}{1} =$ _____ ÷ _____ = _____

5. $\frac{404}{1} =$ _____ ÷ _____ = _____

6. $\frac{8}{1} =$ _____ ÷ _____ = _____

Write as a fraction over one.

7. $2 = \frac{2}{1}$

8. $10 =$

9. $15 =$

10. $26 =$

11. $217 =$

Study the following.

Adding a whole number and a fraction.

$2 + \frac{1}{3} =$

first, change the whole number 2, to a fraction $\frac{2}{1}$

then solve as before by finding the LCM

Multiples of 1: 1, 2, 3,…
Multiples of 3: 3, 6, 6,…
LCM = 3

Change 2/1 to thirds. $\frac{2}{1} \times \boxed{\frac{3}{3}} = \frac{6}{3}$

Add $\frac{6}{3} + \frac{1}{3} = \frac{7}{3}$

Change 7/3 to a mixed fraction. $2\ \frac{1}{3}$ ⟵ Answer.

Solve the following. Show all steps.

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

2. $2 + \frac{2}{5} =$