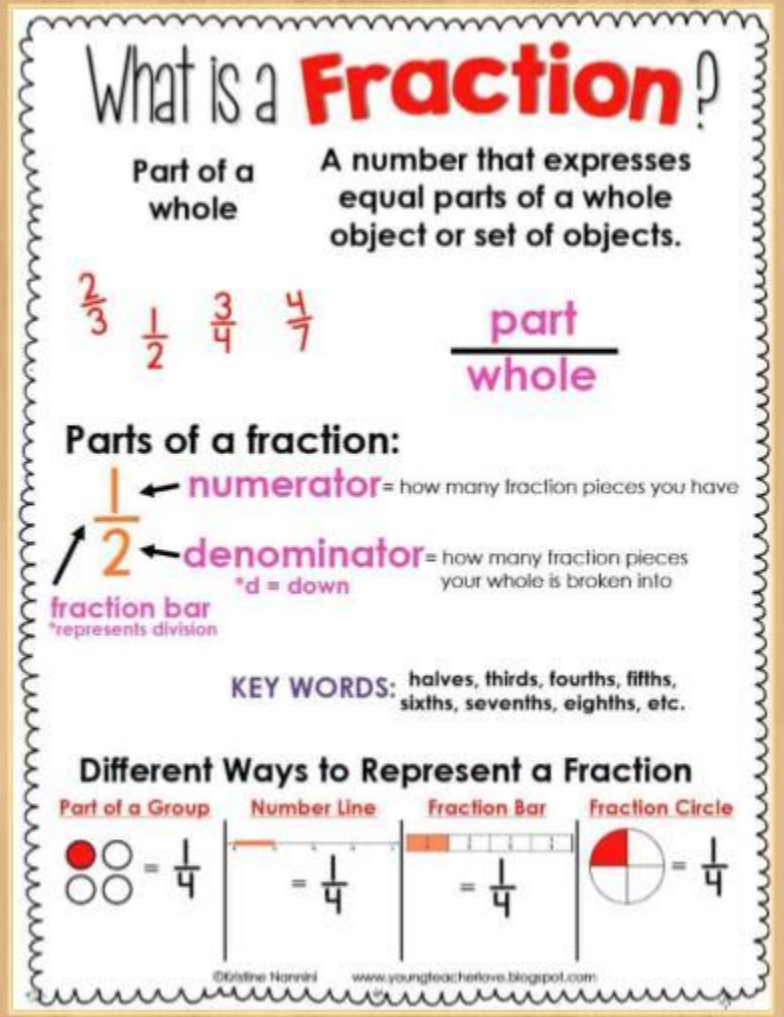
Math Vocabulary Review

numerator the number above the fraction bar in a fraction that tells the number of equal parts that are being described.

denominator the number below the fraction bar in a fraction that tells the number of equal parts in the whole.

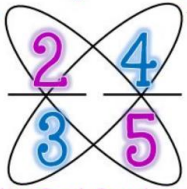
equivalent fractions two or more fractions that name the same part of a whole or the same point on a number line.

common denominator a number that is a common multiple of the denominators of two or more fractions.



Compare Fractions

Comparing Fractions



1. Circle the pairs of numbers that are diagonal from one another.

2. Multiply the numerator from the first fraction by the denominator in the second fraction (Purple numbers). Write the product above the first fraction.

3. Multiply the denominator from the first fraction by the numerator in the second fraction (Blue numbers). Write the product above the second fraction.

4. Compare the two products above the numerators. Write a number sentence with the fractions.

10 < 12 so 2/3 < 4/5

Comparing Fractions Rules

If your fractions have the same **denominator**, compare the numerators.

The fraction with the **larger numerator** is greater!

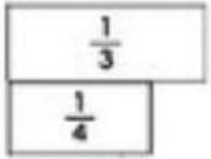
$\frac{5}{8} > \frac{3}{8}$

$\frac{5}{8}$ is greater!

If your fractions have the same **numerator**, compare the denominators.

The fraction with the **smaller denominator** is the greater fraction!

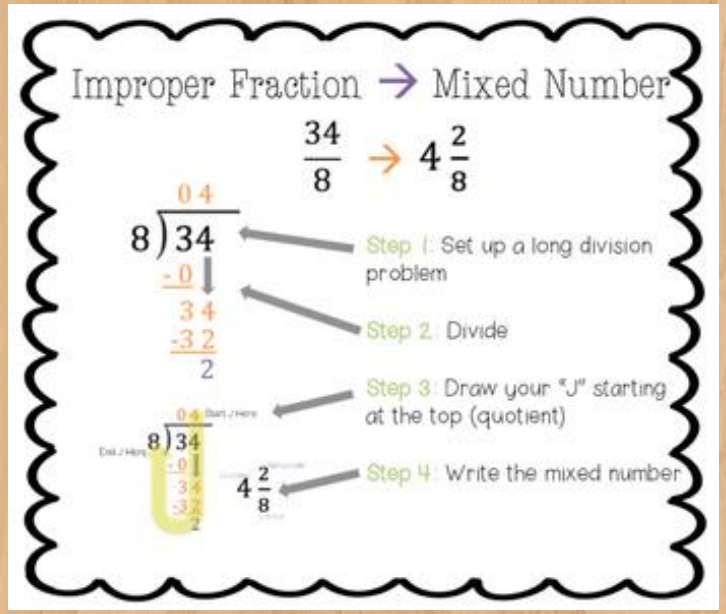
$\frac{1}{3} > \frac{1}{4}$

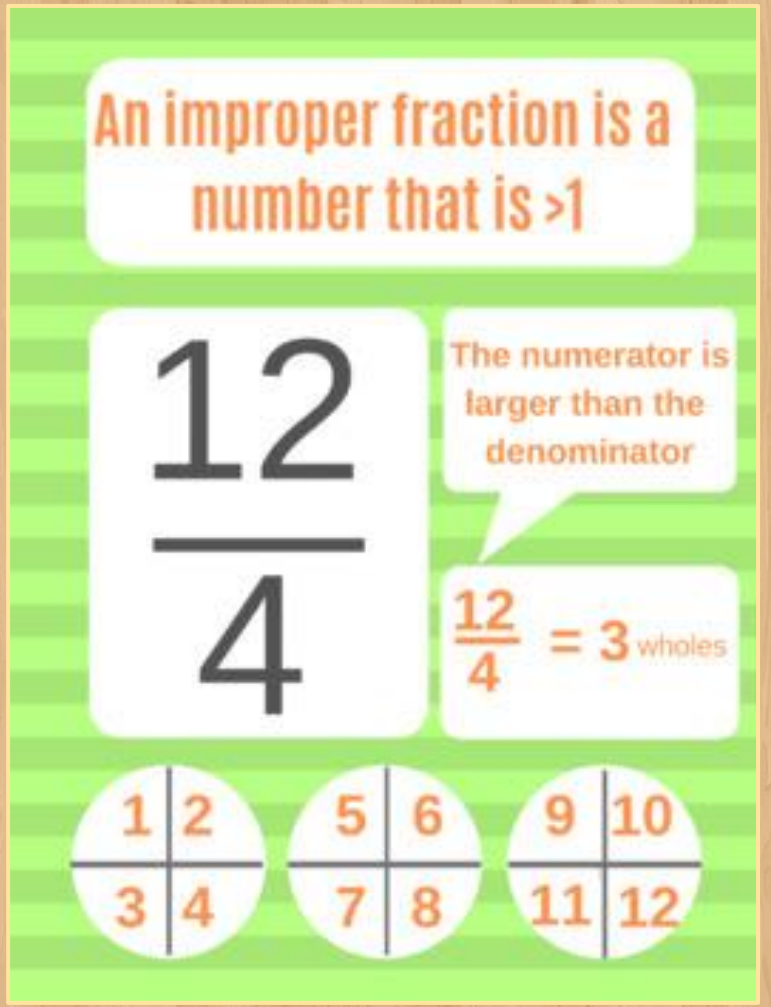


$\frac{1}{3}$ is greater!

IMPROPER FRACTIONS

An improper fraction is a fraction where the numerator is greater than the denominator





Mixed Numbers

A mixed number is a number that consists of a whole number and a proper fraction.

$2\frac{1}{3}$

Whole number

Proper fraction

Add Mixed Numbers With Like Denominators (A)

Add the whole numbers.

Add the fractions.

Reduce the fraction. The whole number stays the same.

$$9\ \frac{3}{10} + 7\ \frac{1}{10} = 16\ \frac{4}{10} \overset{\div 2}{=} 16\ \frac{2}{5}$$

Mixed Number → Improper Fraction

$4 \times 3 = 12$ $12 + 2 = 14$

$$4\frac{2}{3} = \frac{14}{3}$$

Step 1: Multiply the whole number and the denominator

Step 2: Add the product to the numerator

Step 3: Put the sum over the denominator

Improper Fraction → Mixed Number

$$\frac{14}{3} = 4\frac{2}{3}$$

Step 1: Divide

$$3 \overline{)\,14}$$

$$-12$$

Step 2: Remainder goes into the numerator

$$2$$

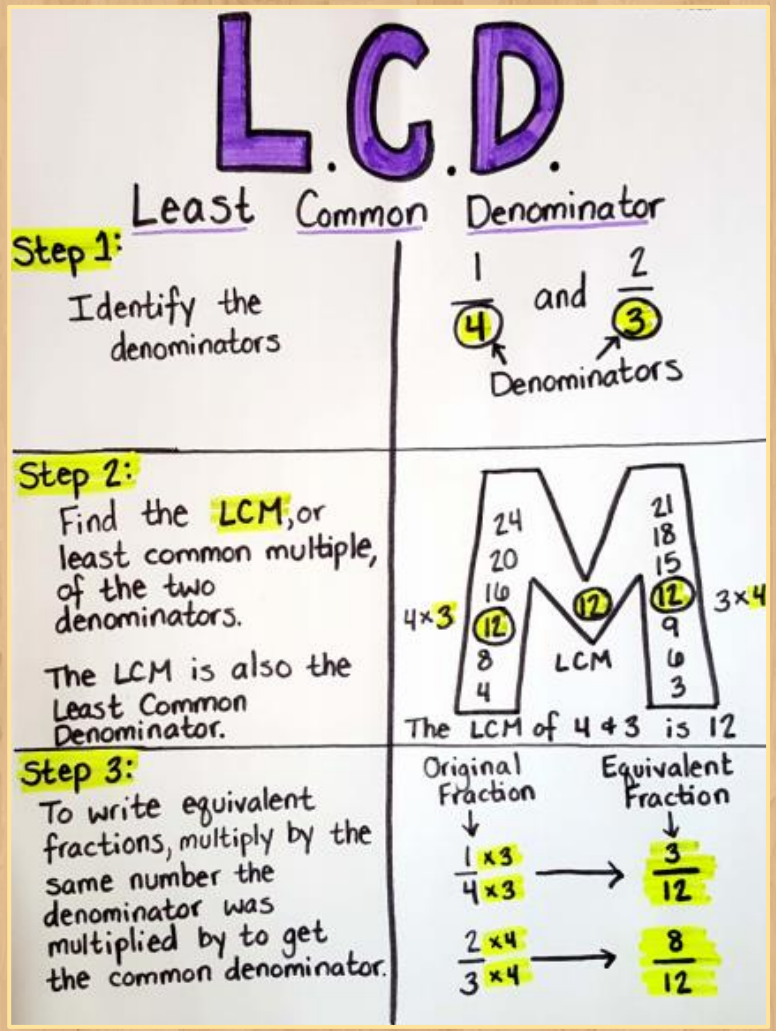
Step 3: Divisor goes into the denominator

$$3$$

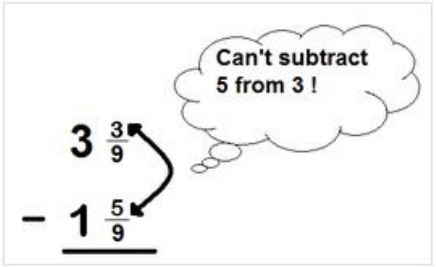
Add & Subtract Fractions

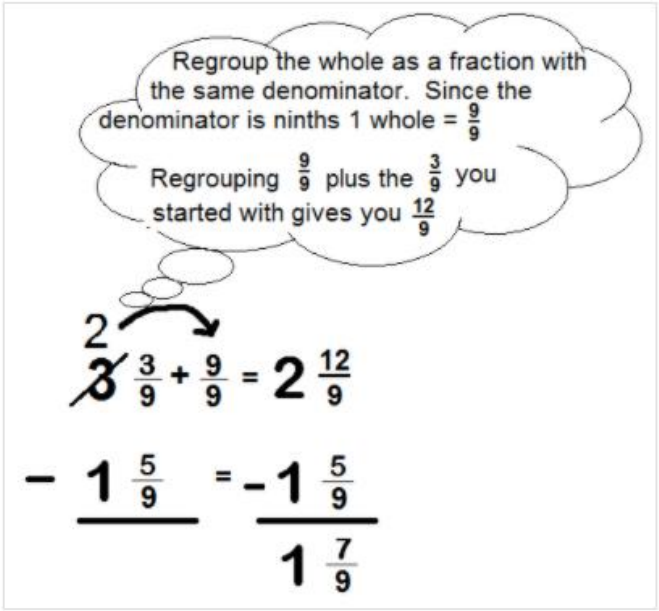
Add & Subtract with Unlike Denominators

1. Check if denominators are the same.
2. Write the fractions vertically
3. Find the LCD
4. The LCD becomes the new denominator for EACh fraction.
5. Add/Subtract & Simplify if needed



Subtract Mixed Numbers with Regrouping





Multiply Fractions

Multiply a Fraction & A Whole Number

Step 1

Write the whole number as a fraction.

Example Problem: ⟶ $2 \times \frac{1}{8}$

Whole number '2' written as a fraction. → $\frac{2}{1} \times \frac{1}{8}$

Step 2

Multiply the numerators together.
Multiply the denominators together.

Numerators 2×1

Denominators 1×8

$= \frac{2}{8}$

Step 3

Check your answer. If it is an improper fraction, change it to a mixed number. If it is not in lowest terms, simplify.

Final Answer

$$\frac{2}{8} \div \frac{2}{2} = \boxed{\frac{1}{4}}$$

The fraction $\frac{2}{8}$ is not in lowest terms and can be simplified.

Multiply Two Fractions

Step 1

Example Problem: ⟶ $\frac{3}{5} \times \frac{5}{8}$

Multiply the numerators together.
Multiply the denominators together.

Numerators $\frac{3}{} \times \frac{5}{} = \frac{15}{}$

Denominators $\frac{}{5} \times \frac{}{8} = \frac{}{40}$

Step 2

Check your answer. If it is an improper fraction, change it to a mixed number. If it is not in lowest terms, simplify.

Final Answer

$$\frac{15}{40} \div \frac{5}{5} = \boxed{\frac{3}{8}}$$

The fraction $\frac{15}{40}$ is not in lowest terms and can be simplified.

Multiply Mixed Numbers

Step 1

Example Problem: ⟶ $3\frac{2}{3} \times 2\frac{3}{7}$

Write each mixed number as an improper fraction.

$3\frac{2}{3} = \frac{11}{3}$

$3 \times 3 + 2 = 11$

$2\frac{3}{7} = \frac{17}{7}$

$7 \times 2 + 3 = 17$

Step 2

Rewrite the multiplication problem horizontally using the improper fractions.

$$\frac{11}{3} \times \frac{17}{7}$$

Step 3

Multiply the numerators together.
Multiply the denominators together.

Numerators 11×17

Denominators 3×7

$$= \frac{187}{21}$$

Step 4

Check your answer. If it is an improper fraction, change it to a mixed number.

$\frac{187}{21}$ ← Dividend, ← Divisor

The fraction $\frac{187}{21}$ is an improper fraction and must be changed to the mixed number.

$21\overline{)187}$ quotient 8 ← Whole Number

-168

19 ← Numerator

Denominator

$8\frac{19}{21}$ Mixed Number

Step 5

Check your answer. If the fraction is not reduced to lowest terms, you must simplify.

Final Answer

$$8\frac{19}{21}$$

Since the numerator and the denominator do not share a common factor, the fraction is simplified to lowest terms.

Divide Fractions

Dividing Fractions

$$\frac{3}{4} \div \frac{2}{7}$$