Fractions

Section 2.2

Adding fraction

Adding Fractions Steps

- Step 1: to add fractions they must have the same denominator
- Step 2: find the lowest common denominator (LCD)
  - Hint: when the denominator changes the numerator changes
- step 3: add the numerators and leave the denominator the same
- step 4: simple if possible

Examples

- $\frac{1}{4} + \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$
- $\frac{1}{4} + \frac{1}{2} = \frac{1}{4} + \frac{2}{4} = \frac{3}{4}$
- $\frac{1}{25} + \frac{3}{4} = \frac{4}{100} + \frac{75}{100} = \frac{79}{100}$

Homework

- Textbook Page 49 #1-13

- What happens when you have a mixed fraction
  - You need to change it into an improper fraction and then follow the same steps as we did for adding proper fractions

Examples

- $1\frac{1}{4} + 2\frac{1}{4} = \frac{5}{4} + \frac{9}{4} = \frac{14}{4} = \frac{7}{2}$

- $1\frac{1}{4} + 1\frac{1}{2} = \frac{5}{4} + \frac{3}{2} = \frac{5}{4} + \frac{6}{4} = \frac{11}{4}$

Homework

- Textbook Page 49 #14-27 and # 30

Subtracting Fractions

Subtracting Fractions Steps

- Step 1: to subtract fractions they must have the same denominator
- Step 2: find the lowest common denominator (LCD)
  - Hint: when the denominator changes of the numerator change
- step 3: subtract the numerators and leave the denominator the same
- step 4: simple if possible

Examples

- $\frac{3}{4} - \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$
- $\frac{5}{6} - \frac{1}{2} = \frac{5}{6} - \frac{3}{6} = \frac{2}{6}$
- $\frac{20}{25} - \frac{3}{5} = \frac{4}{100} + \frac{75}{100} = \frac{79}{100}$

- What happens when you have a mixed fraction
  - You need to change it into an improper fraction and then follow the same steps as we did for subtracting proper fractions

Examples

- $5\frac{1}{4} - 2\frac{1}{4} = \frac{21}{4} - \frac{9}{4} = \frac{12}{4} = 3$

- $4\frac{1}{4} - 1\frac{1}{2} = \frac{17}{4} - \frac{3}{2} = \frac{17}{4} - \frac{6}{4} = \frac{11}{4}$

Homework

- Textbook Page 51 #1-22, 25-28 & 32

Multiplying Fractions

Multiplying Fractions

To MULTIPLY fractions, we DO NOT need a common denominator.

Simply multiply the numerators and multiply the denominators!

Ex. #1: Complete the following fractions.

(a) $\frac{4}{7} \times \frac{1}{5} =$

(b) $\frac{3}{4} \times \frac{2}{6} =$

(c) $5 \times \frac{3}{10} =$

Homework

- Textbook Page 57 # 1-12

Multiplying Improper Fractions & Mixed Numbers

Improper fraction = when the numerator is larger than the denominator.

Mixed number = a term that includes a whole number and a fraction

When multiplying improper fractions, follow the same rules as usual!

Ex. #1: Multiply the following fractions.

$$\frac{11}{4} \times \frac{8}{3} =$$

When multiplying mixed numbers, we must first convert them to improper fractions.

Ex. #2: Convert the following mixed numbers to improper fractions.

(a) $1\frac{3}{4} =$

(b) $2\frac{1}{3} =$

Ex. #3: Determine each product.

(a) $1\frac{1}{10} \times \frac{15}{4} =$

(b) $1\frac{1}{4} \times 3\frac{2}{3} =$

Homework

- Textbook Page 57 #13-25, 34 & 35

Dividing Fractions

To DIVIDE fractions, we DO NOT need a common denominator.

FLIP the SECOND fraction and MULTIPLY!
The flipped fraction is called a reciprocal

Ex. #1: Complete the following fractions.

(a) $\frac{4}{7} \div \frac{1}{5} =$

(b) $\frac{3}{4} \div \frac{2}{6} =$

(c) $5 \div \frac{3}{10} =$

Dividing Improper Fractions & Mixed Numbers

Dividing improper fractions and mixed numbers is the same as multiplying EXCEPT (obviously!) we are DIVIDING!

Ex. #1: Determine each quotient.

$$\frac{11}{4} \div \frac{8}{3} =$$

Ex. #2: Determine each quotient.

(a) $1\frac{1}{10} \div \frac{15}{4} =$

(b) $1\frac{1}{4} \div 3\frac{2}{3} =$

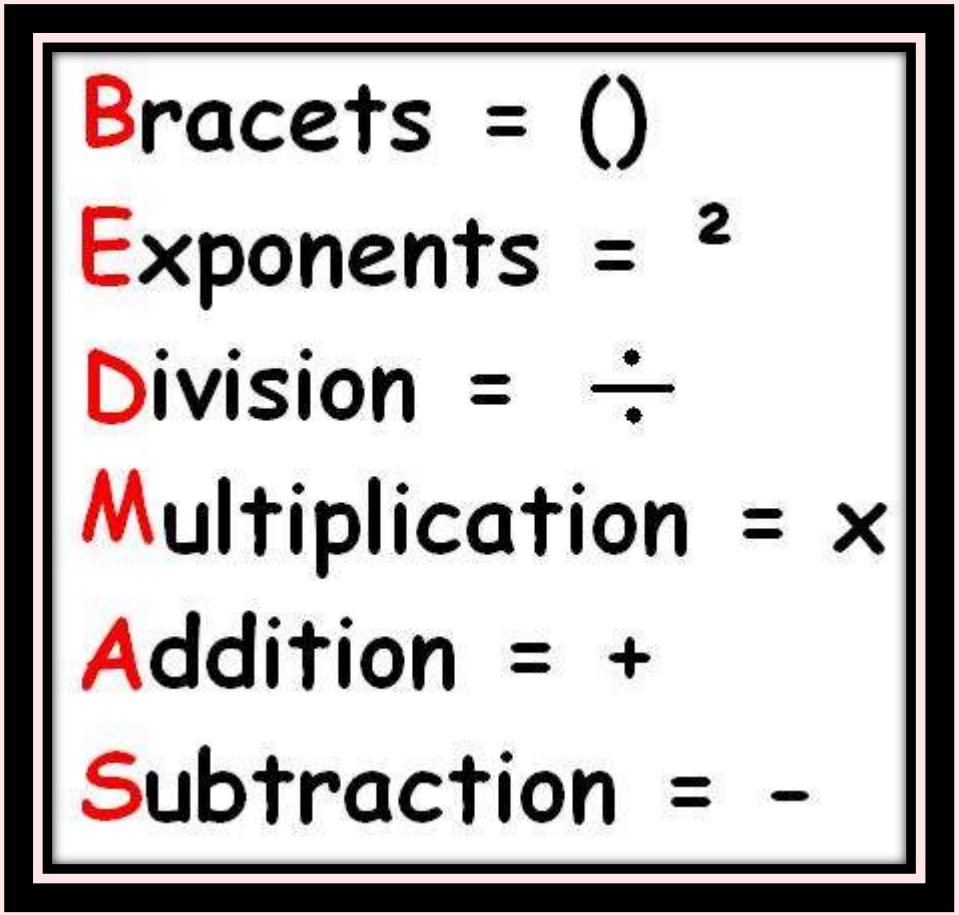
Today's Assignment

Complete

- Page 59 # 10-15 and 18 to 21

Fraction Operations

If there is a mix of addition, subtraction, multiplication, and division, we must follow BEDMAS rules!



Ex. #1: Calculate each expression.

(a) $7 \times \frac{1}{2} - 2 \div \frac{3}{5} =$

(b) $\frac{3}{2} \div \left(\frac{1}{2} + \frac{1}{4}\right) \div \frac{3}{4} =$

(c) $2\frac{1}{4} - \frac{1}{2} \times \left(\frac{3}{4} - \frac{1}{8}\right)$

Today's Assignment

Complete

☺ Order of Operations Worksheets 1, 2 & 3 ☺