

- ❖ A number that represents a part of a whole or set of objects is called **fractions**.
- ❖ The **numerator** of a fraction indicates the **number of shaded parts**, while the **denominator** represents the **total number of parts**.
- ❖ Steps in converting a **Mixed number to Improper Fraction**.
 - Multiply the denominator of the fraction part of the mixed number by the whole number.
 - Add the product in Step 1 and the numerator of the fraction. Then copy the denominator.
- ❖ Steps in converting **Improper Fraction to Mixed Number**.
 - Divide the numerator by the denominator. Then quotient becomes the whole number part of the mixed number.
 - The remainder in Step 1 becomes the numerator of the fraction part of the mixed number. The same denominator in the improper fraction is used.
- ❖ If the numerator and the denominator of a fraction have no common prime factors, then the fraction is in the **lowest term**.
- ❖ If two or more fractions have the same numerator, the fractions with the greatest denominator is the fraction with the smallest value.
- ❖ If two or more fractions have the same denominator, the fraction with the smallest numerator is the fraction with the smallest value.
- ❖ Fractions are said to be **equivalent** if their cross product are equal.
- ❖ To find the missing terms in a given set of fractions, do the following;
 - Find the cross products of the given fractions.
 - Solve for the missing term by dividing either side with the coefficient of the missing term.
- ❖ **Similar fractions** are fractions that have ***common denominator***.
- ❖ **To add similar fractions**, simply add the numerators and write the sum over the common denominator. Express the sum in its lowest term.
- ❖ **To subtract similar fractions**, simply subtract the numerators and write the sum over the common denominator. Express the sum in its lowest term.
- ❖ **To add or subtract dissimilar** fraction with regrouping, find the LCD then follow the same steps in adding and subtracting fractions.
- ❖ **To add or subtract dissimilar fraction**, express them into smaller fractions first before adding or subtracting similar fractions. Always express your answer .
- ❖ In **multiplying fractions**, multiply the numerator and the denominator then simplifying the answer.
- ❖ In **multiplication**, the preposition “of ” means to multiply.
- ❖ The **cancellation method** allows ease in multiplying fractions.
- ❖ In **multiplying fractions in mixed form**, change the mixed number first to an improper fraction then proceed with multiplication.
- ❖ A fraction multiplied by the reciprocal is equal to 1.
- ❖ In **dividing fractions**, we multiply the dividend by the reciprocal of the divisor.
- ❖ A denominator of a whole number is always is always 1.
- ❖ To **divide a mixed number** by either a fraction or a whole number, multiply the dividend by the reciprocal of the divisor.

I. Express the improper fractions as mixed numbers.

1. $\frac{12}{5}$

2. $\frac{13}{4}$

3. $\frac{17}{5}$

4. $\frac{23}{6}$

5. $\frac{15}{7}$

6. $\frac{11}{3}$

7. $\frac{15}{6}$

8. $\frac{34}{8}$

II. Express the mixed numbers as improper fractions.

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

2. $3\frac{4}{9}$

3. $12\frac{4}{7}$

4. $5\frac{3}{5}$

5. $9\frac{3}{6}$

6. $4\frac{2}{7}$

7. $6\frac{5}{6}$

8. $6\frac{2}{5}$

III. Reduce to the lowest terms.

1. $\frac{2}{20}$

2. $\frac{16}{84}$

3. $\frac{9}{15}$

4. $\frac{12}{48}$

5. $\frac{4}{32}$

6. $\frac{15}{27}$

7. $\frac{36}{45}$

8. $\frac{27}{60}$

IV. Arrange each set of fractions in ascending order and vice versa.

1. $\frac{3}{9}, \frac{4}{6}, \frac{2}{4}$

2. $\frac{2}{3}, \frac{3}{6}, \frac{5}{9}$

3. $\frac{4}{36}, \frac{4}{9}, \frac{5}{18}$

4. $\frac{4}{8}, \frac{6}{7}, \frac{3}{7}$

V. Express each fraction in its lowest terms.

1. $\frac{30}{45}$

2. $\frac{10}{40}$

3. $\frac{6}{18}$

4. $\frac{54}{60}$

5. $\frac{18}{20}$

6. $\frac{7}{21}$

7. $\frac{14}{56}$

8. $\frac{18}{60}$

9. $\frac{50}{70}$

10. $\frac{6}{9}$

VI. Perform the indicated operations.

1. $\frac{11}{12} + \frac{1}{12}$

2. $4\frac{1}{9} + 5\frac{2}{9}$

3. $6\frac{6}{30} - \frac{2}{30}$

4. $\frac{14}{25} - \frac{9}{25}$

5. $9 - 3\frac{3}{16}$

6. $\frac{4}{10} + \frac{2}{8}$

7. $6\frac{2}{6} + 2\frac{5}{8}$

8. $\frac{9}{12} - \frac{2}{5}$

9. $8\frac{9}{22} - 1\frac{5}{40}$

10. $5\frac{5}{25} - 3\frac{1}{15}$

11. $\frac{4}{8} \times \frac{10}{8}$

12. $3\frac{2}{3} \times 15$

13. $\frac{5}{6} \times \frac{8}{4}$

14. $6\frac{5}{6} \times 4\frac{10}{20}$

15. $8 \times 6\frac{1}{9}$

16. $\frac{8}{9} \div \frac{1}{4}$

17. $12\frac{3}{8} \div \frac{3}{5}$

18. $\frac{1}{3} \div \frac{1}{2}$

19. $3\frac{2}{3} \div \frac{3}{5}$

20. $36\frac{2}{4} \div 3\frac{1}{8}$

Challenge!

Solve the following problems.

1. Romy buys 9 liters(L) of gasoline. If he uses $\frac{1}{4}$ L, how much gasoline is left?

2. Arnold spends $\frac{1}{3}$ of his weekly allowance for snacks and transportations, and $\frac{1}{5}$

