1.3 Fractions

GCF (Greatest Common Factor)

1. Write each of the given numbers as a product of prime factors.
2. The GCF of two or more numbers is the product of all prime factors **common** to every number.

Example: $10 = 2.5$ and $8 = 2^3$.

GCF of 10 and 8 is: 2

Examples:
1. Find the GCF of 24 and 32.

2. Find the GCF of 15 and 27.

3. Find the GCD of 27, 18, and 45.

LCM (Least Common Multiple)
1. Write each of the given numbers as a product of prime factors.
2. Take the greatest power on each prime and multiply them.

Example: $10 = 2.5$ and $8 = 2^3$.

LCM of 10 and 8 is: $2^3.5 = 40$.

Examples:
1. Find the LCM of 15 and 27:

2. Find the LCM of 18 and 36.

3. Find the LCM of 15, 18, and 36.

4. Find the LCM of 2, 5 and 10.

Adding and Subtracting Fractions:

- Find a least common denominator using method for LCM
- Change the numerators of each fraction
- Add or subtract the numerators (keep denominator unchanged)
- Reduce

Examples:

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

2. $\frac{5}{6}+\frac{3}{8}=$

3. $\frac{2}{5}+\frac{1}{6}+\frac{3}{10}=$

4. $\frac{2}{5}-\frac{1}{6}=$

5. $3\frac{1}{5}-2\frac{1}{4}=$

6. $\frac{1}{2}+\frac{4}{5}-\frac{3}{10}=$

7. $2\frac{1}{4}+3\frac{1}{5}-\frac{3}{10}=$

8. $\frac{4}{5}+4=$

Multiplying and Dividing Fractions:

- Simplify the fractions if not in lowest terms.
- Multiply the numerators of the fractions to get the new numerator.
- Multiply the denominators of the fractions to get the new denominator.

Examples:

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

2. $\frac{5}{8}\times\frac{2}{3}=$

3. $\frac{4}{5}\times 6=$

Dividing Fractions:

- Multiply the first fraction by the reciprocal of the second

Examples:

1. $\frac{3}{2}\div\frac{6}{7}=$

2. $\frac{4}{5} \div \frac{8}{11} =$

3. $\frac{4}{9} \div 8 =$

4. $\frac{\left(\frac{4}{5}\right)}{\left(\frac{2}{7}\right)} =$

5. $\frac{\left(-\frac{7}{10}\right)}{\left(-\frac{2}{9}\right)} =$