The Fraction Cheat Sheet

1. Converting an improper fraction into a mixed number.
- Divide the numerator by the denominator. The remainder becomes the new numerator.

Remember!

$$\frac{Numerator}{Denominator}$$

Ex. $\frac{17}{5} = 3\frac{2}{5}$

2. Converting a mixed number into an improper fraction.
- Use the checkmark method, multiply the denominator by the whole number and add the numerator.

Ex. $2\frac{5}{6} = \frac{17}{6}$

3. Adding fractions.
- Find a common denominator for the two fractions. Make equivalent fractions and add the numerators. Change the answer to the lowest mixed number if the question requires.

Ex. $\frac{4}{5} + \frac{2}{3} = \frac{12}{15} + \frac{10}{15} = \frac{22}{15} = 1\frac{7}{15}$

4. Subtracting Fractions.
- Find a common denominator for the two fractions. Make equivalent fractions and subtract the numerators. Change the answer to the lowest mixed number if the question requires.
- If using mixed numbers, borrow from the whole number if you cannot subtract the numerators.

Ex. $2\frac{1}{3} - 1\frac{3}{4} = 2\frac{4}{12} - 1\frac{9}{12} = 1\frac{16}{12} - 1\frac{9}{12} = \frac{7}{12}$

5. Multiplying Fractions.
- Reduce the numbers diagonally and then multiply the numerators and denominators separately.

Ex. $\frac{2}{3} \times \frac{3}{5} = \frac{2}{3} \times \frac{3}{5} = \frac{2\times1}{1\times5} = \frac{2}{5}$

- When multiplying mixed numbers, change to improper fractions first.

Ex. $1\frac{1}{3} \times 2\frac{1}{5} = \frac{4}{3} \times \frac{11}{5} = \frac{4\times11}{3\times5} = \frac{44}{15} = 2\frac{14}{15}$

6. Dividing Fractions.
- Change the division statement by multiplying by the reciprocal. Reduce the numbers diagonally and then multiply the numerators and denominators separately.

Ex. $\frac{5}{6} \div \frac{7}{8} = \frac{5}{6} \times \frac{8}{7} = \frac{5}{6} \times \frac{8}{7} = \frac{5\times4}{3\times7} = \frac{20}{21}$

Reciprocal – a fraction flipped upside down!

Ex. $\frac{2}{3}$ Reciprocal is $\frac{3}{2}$

- When dividing mixed numbers, change to improper fractions first.

Ex. $3\frac{1}{2} \div 1\frac{2}{5} = \frac{7}{2} \div \frac{7}{5} = \frac{7}{2} \times \frac{5}{7} = \frac{7}{2} \times \frac{5}{7} = \frac{1\times5}{2\times1} = \frac{5}{2} = 2\frac{1}{2}$