Adding and Subtracting Fractions

Unit 5 Lesson 3

Students will be able to:

Understand how to add and subtract fractions

Key Vocabulary:

- Fraction
- Add Fractions
- Subtract Fractions
- Mental Math

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Fraction

A fraction is a mathematical expression representing the division of one whole number by another.

Examples:

$$\frac{3}{4}, \frac{13}{7}, \frac{1}{100}$$

Add and Subtract Fractions using Mental Math

If the **denominators** of all the fractions to be added or subtracted are same, then mental math can be effective in quickly adding or subtracting the fractions. The principle is to keep the denominator as such and add or subtract only the numerators just like the normal numbers and then write the result as a simplified fraction with numerator and denominator.
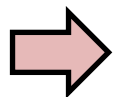
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Problem 1: Add the fractions $\frac{9}{16}$, $\frac{13}{16}$, $\frac{10}{16}$ using mental math.

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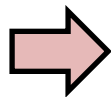
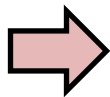Since the denominators are same, we simply add the numerators:

$$9 + 13 + 10 = 32$$

Now write the result:

$$\frac{9}{16} + \frac{13}{16} + \frac{10}{16} = \frac{32}{16}$$

$$\frac{32}{16} = 2$$

$$\frac{9}{16} + \frac{13}{16} + \frac{10}{16} = 2$$

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Add and Subtract Fractions using LCM

If the **denominators** of all the fractions to be added or subtracted are different, then we need to take LCM of the denominators and use that as a common denominator for adding or subtracting fractions.

LCM:

LCM stands for least common multiple. It is the lowest common multiple of all the numbers i.e. the lowest number divisible by all the given numbers.
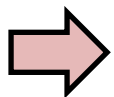
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Problem 2: Find the sum of $\frac{3}{2}$ and $\frac{14}{5}$.

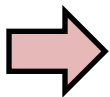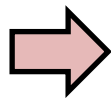**Problem 2: Find the sum of $\frac{3}{2}$ and $\frac{14}{5}$.**

Denominators are different, so take the LCM of 2 and 5.

$$LCM = 2 \times 5 = 10$$

$$\frac{3}{2} + \frac{14}{5} = \frac{3(5) + 14(2)}{10} = \frac{43}{10}$$

$$\boxed{\frac{3}{2} + \frac{14}{5} = \frac{43}{10}}$$