

## BASIC OPERATIONS WITH FRACTIONS

Solve the following exercises by completing the blank spaces.

1. Add or subtract the following fractions with the **butterfly method**. Simplify your answer and write it as mixed number, if possible.

a.  $-\frac{9}{10} + \frac{4}{9} = \frac{(-9 \cdot 9) + (\square \cdot 10)}{10 \cdot \square} = \frac{\square + \square}{\square} = \frac{\square}{\square} = -\frac{\square}{\square}$

b.  $-\frac{3}{7} - \frac{10}{11} = \frac{(\square \cdot 11) - (10 \cdot 7)}{\square \cdot 11} = \frac{\square - \square}{77} = \frac{\square}{77} = -\frac{\square}{77} = -\square \frac{\square}{77}$

2. Add or subtract the following fractions with the **LCM method**.

a.  $\frac{5}{6} - \frac{7}{18} - \frac{2}{9}$

$M_{18} = \{\square, \dots\}$   
 $M_9 = \{9, \square, \dots\}$   
 $M_6 = \{6, 12, \square, \dots\}$   
 $\Rightarrow \text{LCM}(6, 9, 18) = \square$

$\frac{5 \cdot \square}{6 \cdot \square} - \frac{7}{18} - \frac{2 \cdot \square}{9 \cdot \square} = \frac{\square}{\square} - \frac{7}{18} - \frac{\square}{\square} = \frac{\square - 7 - \square}{18} = \frac{4 - \square}{18 \div \square} = \frac{2}{9}$

b.  $-\frac{7}{14} + \frac{4}{21}$

$M_{21} = \{21, \square, \dots\}$   
 $M_{14} = \{14, 28, \square, \dots\}$   
 $\Rightarrow \text{LCM}(14, 21) = \square$

$-\frac{7 \cdot \square}{14 \cdot \square} + \frac{4 \cdot \square}{21 \cdot \square} = -\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square + \square}{42} = \frac{\square}{42} = -\frac{\square}{42}$



3. Solve the following exercises. Simplify your answer and write it as mixed number, if possible.

a.  $-2\frac{2}{3} \cdot 1\frac{1}{17} = -\frac{\square}{3} \cdot \frac{\square}{17} = -\frac{8}{3 \cdot \square} \cdot \frac{18 \div \square}{17} = -\frac{8}{\square} \cdot \frac{\square}{17} = -\frac{\square}{\square} = \square \frac{\square}{\square}$

b.  $2\frac{13}{18} \div 2\frac{11}{12} = \frac{\square}{18} \div \frac{\square}{12} = \frac{\square}{18} \cdot \frac{\square}{\square} = \frac{\square \div 7}{18 \div \square} \cdot \frac{\square \div \square}{\square \div 7} = \frac{\square}{\square} \cdot \frac{\square}{\square} = \frac{\square}{\square}$