PreAlgebra
Skill-Builder #SMN–1
Adding Signed Mixed Numbers

Recall that when adding two numbers with **same signs**, we must **add their absolute values**, and **keep the sign**.

This rule also applies when we add signed mixed numbers. To add the fraction part of the mixed number, you must make sure that the denominators are the same. If not, we must first find the LCD (least common denominator). If the sum of the fraction parts is an improper fraction, carry over to the whole number part.

Example 1

Simplify: $-15\frac{2}{3} - 45\frac{1}{6}$

$-45\frac{1}{6}$

$-15\frac{2}{3}$ $\xrightarrow{\text{Same Signs! ADD their absolute values}}$ $\begin{array}{r} -45\ \frac{1}{6} \\ -15\ \frac{4}{6} \\ \hline -60\ \frac{5}{6} \end{array}$

Keep the sign!

$\boxed{\textit{Answer: } -60\ \frac{5}{6}}$

Example 2

Simplify: $27\frac{2}{3} + 49\frac{3}{4}$

$+27\frac{2}{3}$

$+49\frac{3}{4}$ $\xrightarrow{\text{Same Signs! ADD their absolute values}}$ $\begin{array}{r} 27\frac{8}{12} \\ 49\frac{9}{12} \\ \hline \end{array}$

Keep the sign!

$76\frac{17}{12} = 76 + \frac{17}{12}$

If the sum of the fraction parts is an improper fraction, carry over to the whole number part.

$= 76 + 1\frac{5}{12} = 77\frac{5}{12}$

$\boxed{\textit{Answer: } 77\ \frac{5}{12}}$

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Simplify the following.

1. $10\dfrac{7}{12} \; + \; 18\dfrac{4}{15}$

2. $-\,37\dfrac{2}{5} \; - \; 17\dfrac{3}{10}$

3. $25\dfrac{11}{12} \; + \; 9\dfrac{5}{8}$

4. $-\,58\dfrac{5}{6} \; - \; 43\dfrac{7}{8}$

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Answers

1. $28\dfrac{17}{20}$

2. $-54\dfrac{7}{10}$

3. $35\dfrac{13}{24}$

4. $-102\dfrac{17}{24}$