Adding and Subtracting Mixed Numbers

Spot mistakes, reason, and work backward

Name _____ **Date** _____ **Score** _____ / 8

QUICK REVIEW

With mixed numbers, combine wholes and like fractional parts, or rename as fractions. $2\frac{1}{8} - 1\frac{3}{8} = \frac{17}{8} - \frac{11}{8} = \frac{6}{8} = \frac{3}{4}$. Regrouping one whole gives $2\frac{1}{8} = 1\frac{9}{8}$.

Worked example

Find $3\frac{1}{6} + 2\frac{2}{6}$.

1. Rename the mixed numbers: $3\frac{1}{6} = \frac{19}{6}$ and $2\frac{1}{3} = \frac{14}{6}$.
2. $\frac{19}{6} + \frac{14}{6} = \frac{33}{6}$ because $19 + 14 = 33$.
3. $33 = 5 \times 6 + 3$, so the result is $5\frac{1}{2}$.
Answer: $5\frac{1}{2}$.

Practice Problems

Show your thinking.

1. Find the missing addend in $1\frac{5}{8} + \square = 3\frac{5}{8}$.

2. How much must be removed from $3\frac{5}{6}$ to leave $1\frac{2}{6}$?

3. A subtraction starts with an unknown number, removes $4\frac{1}{4}$, and leaves $2\frac{3}{4}$. Find the start.

4. Complete $1\frac{9}{10} + \square = 3\frac{7}{10}$.

5. A student adds $2\frac{3}{5} + 1\frac{4}{5}$ and reports $3\frac{7}{5}$. Rename the result correctly.

6. Fill a regrouping model: $4\frac{2}{8} = 3 + \frac{\square}{8}$.

Wholes	Eighths
4	2
3	☐

7. Which difference needs regrouping: $3\frac{7}{8} - 1\frac{2}{8}$ or $3\frac{1}{8} - 1\frac{5}{8}$? Find both.

8. A $3\frac{5}{6}$-m board loses $1\frac{3}{6}$ m. Find the length left.

Answer Key

1. 2.
2. $2\frac{1}{2}$.
3. 7.
4. $1\frac{4}{5}$.
5. $4\frac{2}{5}$.
6. 10.
7. Only the second; results $2\frac{5}{8}$ and $1\frac{4}{8}$.
8. $2\frac{1}{3}$ m.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Rename the mixed numbers: $3\frac{5}{8} = \frac{29}{8}$ and $1\frac{5}{8} = \frac{13}{8}$.
2. $\frac{29}{8} - \frac{13}{8} = \frac{16}{8}$ because $29 - 13 = 16$.
3. $16 = 2 \times 8 + 0$, so the result is 2.

Problem 2

1. Rename the mixed numbers: $3\frac{5}{6} = \frac{23}{6}$ and $1\frac{1}{3} = \frac{8}{6}$.
2. $\frac{23}{6} - \frac{8}{6} = \frac{15}{6}$ because $23 - 8 = 15$.
3. $15 = 2 \times 6 + 3$, so the result is $2\frac{1}{2}$.

Problem 3

1. Rename the mixed numbers: $2\frac{3}{4} = \frac{11}{4}$ and $4\frac{1}{4} = \frac{17}{4}$.
2. $\frac{11}{4} + \frac{17}{4} = \frac{28}{4}$ because $11 + 17 = 28$.
3. $28 = 7 \times 4 + 0$, so the result is 7.

Problem 4

1. Rename the mixed numbers: $3\frac{7}{10} = \frac{37}{10}$ and $1\frac{9}{10} = \frac{19}{10}$.
2. $\frac{37}{10} - \frac{19}{10} = \frac{18}{10}$ because $37 - 19 = 18$.
3. $18 = 1 \times 10 + 8$, so the result is $1\frac{4}{5}$.

Problem 5

1. The fraction $\frac{7}{5} = 1\frac{2}{5}$.
2. Thus $3\frac{7}{5} = 3 + 1\frac{2}{5} = 4\frac{2}{5}$.
3. $\frac{13}{5} + \frac{9}{5} = \frac{22}{5} = 4\frac{2}{5}$ checks it.

Problem 6

1. Exchange one whole for $\frac{8}{8}$.
2. The fractional numerator becomes $8 + 2 = 10$.
3. $3 + \frac{10}{8} = 4\frac{2}{8}$ preserves the value.

Problem 7

1. First: $3 - 1 = 2$ and $7 - 2 = 5$, giving $2\frac{5}{8}$.
2. Second: $3\frac{1}{8} = 2\frac{9}{8}$.
3. $2\frac{9}{8} - 1\frac{5}{8} = 1\frac{4}{8}$.

Problem 8

1. Rename the mixed numbers: $3\frac{5}{6} = \frac{23}{6}$ and $1\frac{1}{2} = \frac{9}{6}$.
2. $\frac{23}{6} - \frac{9}{6} = \frac{14}{6}$ because $23 - 9 = 14$.
3. $14 = 2 \times 6 + 2$, so the result is $2\frac{1}{3}$.

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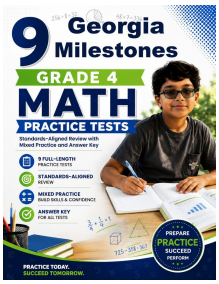

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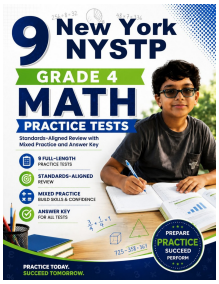

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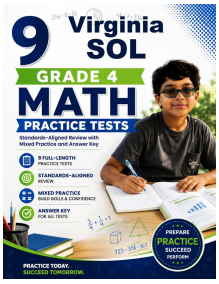

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