ADDITION AND SUBTRACTION OF MIXED NUMBERS

To subtract mixed numbers, change the mixed numbers into fractions greater than one, find a common denominator, then subtract. Other strategies are also possible. For additional information, see the Math Notes box in Lesson 4.1.3 of the Core Connections, Course 1 text. For additional examples and practice, see the Core Connections, Course 1 Checkpoint 4 materials.

Example

Find the difference: $3 \frac{1}{5} - 1 \frac{2}{3}$

$3 \frac{1}{5} = \frac{16}{5} = \frac{48}{15}$

$-1 \frac{2}{3} = \frac{5}{3} = \frac{-25}{15}$

$= \frac{23}{15} = 1 \frac{8}{15}$

Problems

Find each difference.

1. $2 \frac{1}{2} - 1 \frac{3}{4}$
2. $4 \frac{1}{3} - 3 \frac{5}{6}$
3. $1 \frac{1}{6} - \frac{3}{4}$

4. $5 \frac{2}{5} - 3 \frac{2}{3}$
5. $7 - 1 \frac{2}{3}$
6. $5 \frac{3}{8} - 2 \frac{2}{3}$

Answers

1. $\frac{5}{2} - \frac{7}{4} = \frac{10}{4} - \frac{7}{4} = \frac{3}{4}$

2. $\frac{13}{3} - \frac{23}{6} = \frac{26}{6} - \frac{23}{6} = \frac{3}{6} = \frac{1}{2}$

3. $\frac{7}{6} - \frac{3}{4} = \frac{14}{12} - \frac{9}{12} = \frac{5}{12}$

4. $\frac{27}{5} - \frac{11}{3} = \frac{81}{15} - \frac{55}{15} = \frac{26}{15} = 1 \frac{11}{15}$

5. $\frac{7}{1} - \frac{5}{3} = \frac{21}{3} - \frac{5}{3} = \frac{16}{3}$ or $5 \frac{1}{3}$

6. $\frac{43}{8} - \frac{8}{3} = \frac{129}{24} - \frac{64}{24} = \frac{65}{24}$ or $2 \frac{17}{24}$
To add mixed numbers, it is possible to change the mixed numbers into fractions greater than one, find a common denominator, then add. Many times it is more efficient to add the whole numbers, add the fractions after getting a common denominator, and then simplify the answer. For additional information, see the Math Notes box in Lesson 4.1.3 of the Core Connections, Course 1 text. For additional examples and practice, see the Core Connections, Course 1 Checkpoint 4 materials.

Example

Find the sum: $8 \frac{3}{4} + 4 \frac{2}{5}$

\[
8 \frac{3}{4} = 8 + \frac{3}{4} = 8 \frac{15}{20} \\
+4 \frac{2}{5} = 4 + \frac{2}{5} = 4 \frac{8}{20} \\
\frac{12}{20} = 13 \frac{3}{20}
\]

Problems

Find each sum.

1. $5 \frac{3}{4} + 3 \frac{1}{6}$
2. $5 \frac{2}{3} + 8 \frac{3}{8}$
3. $4 \frac{4}{9} + 5 \frac{2}{3}$
4. $1 \frac{2}{5} + 3 \frac{5}{6}$
5. $4 \frac{1}{2} + 5 \frac{3}{8}$
6. $5 \frac{4}{7} + 3 \frac{2}{3}$

Answers

1. $8 \frac{11}{12}$
2. $13 \frac{25}{24} = 14 \frac{1}{24}$
3. $9 \frac{10}{9} = 10 \frac{1}{9}$
4. $4 \frac{37}{30} = 5 \frac{7}{30}$
5. $9 \frac{7}{8}$
6. $8 \frac{26}{21} = 9 \frac{5}{21}$