

LESSON 28

Subtraction Of Mixed Numbers

(Making Common Denominators And Borrowing)

Subtraction of mixed numbers may require both finding common denominators and borrowing. The common denominators should be found first.

Example 1: Subtract

$$7\frac{1}{3} - 2\frac{3}{4}$$

$$7\frac{1}{3} = 7\frac{4}{12} = 6\frac{16}{12}$$

$$- 2\frac{3}{4} = - 2\frac{9}{12} = - 2\frac{9}{12}$$

$$4\frac{7}{12}$$

Example 2: Subtract

$$8\frac{5}{9} - 2\frac{5}{6}$$

$$8\frac{5}{9} = 8\frac{10}{18} = 7\frac{28}{18}$$

$$- 2\frac{5}{6} = - 2\frac{15}{18} = - 2\frac{15}{18}$$

$$5\frac{13}{18}$$

Subtract By Borrowing And Give a Reduced Answer

<p>1.</p> $\begin{array}{r} 5 \frac{1}{3} = 5 \frac{2}{6} = 4 \frac{8}{6} \\ - \\ 3 \frac{5}{6} = 3 \frac{5}{6} = 3 \frac{5}{6} \\ \hline 1 \frac{3}{6} = 1 \frac{1}{2} \end{array}$	<p>6.</p> $\begin{array}{r} 15 \frac{3}{10} = 15 \frac{30}{100} = 14 \frac{130}{100} \\ - \\ 7 \frac{81}{100} = 7 \frac{81}{100} = 7 \frac{81}{100} \\ \hline 7 \frac{49}{100} \end{array}$
<p>2.</p> $\begin{array}{r} 16 \frac{1}{4} = 16 \frac{2}{8} = 15 \frac{10}{8} \\ - \\ 2 \frac{7}{8} = 2 \frac{7}{8} = 2 \frac{7}{8} \\ \hline 13 \frac{3}{8} \end{array}$	<p>7.</p> $\begin{array}{r} 8 \frac{5}{9} = 8 \frac{20}{36} = 7 \frac{56}{36} \\ - \\ 1 \frac{31}{36} = 1 \frac{31}{36} = 1 \frac{31}{36} \\ \hline 6 \frac{25}{36} \end{array}$
<p>3.</p> $\begin{array}{r} 7 \frac{1}{15} = 7 \frac{1}{15} = 6 \frac{16}{15} \\ - \\ 2 \frac{3}{5} = 2 \frac{9}{15} = 2 \frac{9}{15} \\ \hline 4 \frac{7}{15} \end{array}$	<p>8.</p> $\begin{array}{r} 16 \frac{7}{40} = 16 \frac{7}{40} = 15 \frac{47}{40} \\ - \\ 2 \frac{4}{5} = 2 \frac{32}{40} = 2 \frac{32}{40} \\ \hline 13 \frac{15}{40} = 13 \frac{3}{8} \end{array}$
<p>4.</p> $\begin{array}{r} 5 \frac{1}{3} = 5 \frac{4}{12} = 4 \frac{16}{12} \\ - \\ 2 \frac{7}{12} = 2 \frac{7}{12} = 2 \frac{7}{12} \\ \hline 2 \frac{9}{12} = 2 \frac{3}{4} \end{array}$	<p>9.</p> $\begin{array}{r} 4 \frac{1}{12} = 4 \frac{6}{72} = 3 \frac{78}{72} \\ - \\ 1 \frac{41}{72} = 1 \frac{41}{72} = 1 \frac{41}{72} \\ \hline 2 \frac{37}{72} \end{array}$
<p>5.</p> $\begin{array}{r} 6 \frac{3}{8} = 6 \frac{9}{24} = 5 \frac{33}{24} \\ - \\ 1 \frac{17}{24} = 1 \frac{17}{24} = 1 \frac{17}{24} \\ \hline 4 \frac{16}{24} = 4 \frac{2}{3} \end{array}$	<p>10.</p> $\begin{array}{r} 3 \frac{7}{48} = 3 \frac{7}{48} = 2 \frac{55}{48} \\ - \\ 2 \frac{11}{16} = 2 \frac{33}{48} = 2 \frac{33}{48} \\ \hline \frac{22}{48} = \frac{11}{24} \end{array}$

Subtract By Borrowing And Give a Reduced Answer

11.

$$\begin{array}{r} 12 \frac{2}{5} = 12 \frac{6}{15} = 11 \frac{21}{15} \\ - \\ 7 \frac{2}{3} = 7 \frac{10}{15} = 7 \frac{10}{15} \\ \hline 4 \frac{11}{15} \end{array}$$

16.

$$\begin{array}{r} 13 \frac{2}{9} = 13 \frac{10}{45} = 12 \frac{55}{45} \\ - \\ 2 \frac{4}{5} = 2 \frac{36}{45} = 2 \frac{36}{45} \\ \hline 10 \frac{19}{45} \end{array}$$

12.

$$\begin{array}{r} 6 \frac{1}{2} = 6 \frac{5}{10} = 5 \frac{15}{10} \\ - \\ 2 \frac{3}{5} = 2 \frac{6}{10} = 2 \frac{6}{10} \\ \hline 3 \frac{9}{10} \end{array}$$

17.

$$\begin{array}{r} 20 \frac{1}{2} = 20 \frac{15}{30} = 19 \frac{45}{30} \\ - \\ 1 \frac{14}{15} = 1 \frac{28}{30} = 1 \frac{28}{30} \\ \hline 18 \frac{17}{30} \end{array}$$

13.

$$\begin{array}{r} 7 \frac{3}{4} = 7 \frac{15}{20} = 6 \frac{35}{20} \\ - \\ 1 \frac{4}{5} = 1 \frac{16}{20} = 1 \frac{16}{20} \\ \hline 5 \frac{19}{20} \end{array}$$

18.

$$\begin{array}{r} 13 \frac{2}{9} = 13 \frac{14}{63} = 12 \frac{77}{63} \\ - \\ 4 \frac{5}{7} = 4 \frac{45}{63} = 4 \frac{45}{63} \\ \hline 8 \frac{32}{63} \end{array}$$

14.

$$\begin{array}{r} 12 \frac{3}{7} = 12 \frac{12}{28} = 11 \frac{40}{28} \\ - \\ 2 \frac{3}{4} = 2 \frac{21}{28} = 2 \frac{21}{28} \\ \hline 9 \frac{19}{28} \end{array}$$

19.

$$\begin{array}{r} 6 \frac{1}{8} = 6 \frac{11}{88} = 5 \frac{99}{88} \\ - \\ 2 \frac{3}{11} = 2 \frac{24}{88} = 2 \frac{24}{88} \\ \hline 3 \frac{75}{88} \end{array}$$

15.

$$\begin{array}{r} 2 \frac{5}{9} = 2 \frac{20}{36} = 1 \frac{56}{36} \\ - \\ 1 \frac{3}{4} = 1 \frac{27}{36} = 1 \frac{27}{36} \\ \hline 29 \\ 36 \end{array}$$

20.

$$\begin{array}{r} 4 \frac{7}{16} = 4 \frac{21}{48} = 3 \frac{69}{48} \\ - \\ 1 \frac{2}{3} = 1 \frac{32}{48} = 1 \frac{32}{48} \\ \hline 2 \frac{37}{48} \end{array}$$

Subtract By Borrowing And Give a Reduced Answer

<p>21.</p> $\begin{array}{r} 12 \frac{3}{4} = 12 \frac{9}{12} = 11 \frac{21}{12} \\ - \\ 1 \frac{5}{6} = 1 \frac{10}{12} = 1 \frac{10}{12} \\ \hline 10 \frac{11}{12} \end{array}$	<p>26.</p> $\begin{array}{r} 12 \frac{2}{9} = 12 \frac{8}{36} = 11 \frac{44}{36} \\ - \\ 3 \frac{7}{12} = 3 \frac{21}{36} = 3 \frac{21}{36} \\ \hline 8 \frac{23}{36} \end{array}$
<p>22.</p> $\begin{array}{r} 7 \frac{3}{8} = 7 \frac{15}{40} = 6 \frac{55}{40} \\ - \\ 2 \frac{7}{10} = 2 \frac{28}{40} = 2 \frac{28}{40} \\ \hline 4 \frac{17}{40} \end{array}$	<p>27.</p> $\begin{array}{r} 10 \frac{3}{25} = 10 \frac{12}{100} = 9 \frac{112}{100} \\ - \\ 4 \frac{11}{20} = 4 \frac{55}{100} = 4 \frac{55}{100} \\ \hline 5 \frac{56}{100} = 5 \frac{14}{25} \end{array}$
<p>23.</p> $\begin{array}{r} 12 \frac{1}{6} = 12 \frac{4}{24} = 11 \frac{28}{24} \\ - \\ 3 \frac{5}{8} = 3 \frac{15}{24} = 3 \frac{15}{24} \\ \hline 8 \frac{13}{24} \end{array}$	<p>28.</p> $\begin{array}{r} 3 \frac{7}{20} = 3 \frac{21}{60} = 2 \frac{81}{60} \\ - \\ 1 \frac{21}{30} = 1 \frac{42}{60} = 1 \frac{42}{60} \\ \hline 1 \frac{39}{60} \end{array}$
<p>24.</p> $\begin{array}{r} 9 \frac{5}{12} = 9 \frac{15}{36} = 8 \frac{51}{36} \\ - \\ 3 \frac{8}{9} = 3 \frac{32}{36} = 3 \frac{32}{36} \\ \hline 5 \frac{19}{36} \end{array}$	<p>29.</p> $\begin{array}{r} 12 \frac{13}{33} = 12 \frac{26}{66} = 11 \frac{92}{66} \\ - \\ 4 \frac{17}{22} = 4 \frac{51}{66} = 4 \frac{51}{66} \\ \hline 7 \frac{41}{66} \end{array}$
<p>25.</p> $\begin{array}{r} 6 \frac{5}{12} = 6 \frac{15}{36} = 5 \frac{51}{36} \\ - \\ 3 \frac{11}{18} = 3 \frac{22}{36} = 3 \frac{22}{36} \\ \hline 2 \frac{29}{36} \end{array}$	<p>30.</p> $\begin{array}{r} 10 \frac{3}{24} = 10 \frac{6}{48} = 9 \frac{54}{48} \\ - \\ 7 \frac{15}{16} = 7 \frac{45}{48} = 7 \frac{45}{48} \\ \hline 2 \frac{9}{48} = 2 \frac{3}{16} \end{array}$