

LESSON

Practice B**5-2*****Adding and Subtracting with Unlike Denominators***

Add or subtract. Write each answer in simplest form.

1. $\frac{6}{7} + \frac{1}{3}$

2. $\frac{3}{7} - \frac{2}{5}$

3. $\frac{1}{4} + \frac{3}{8}$

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

5. $\frac{1}{6} + \frac{3}{5}$

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

7. $\frac{5}{9} - \frac{1}{3}$

8. $\frac{7}{8} + \frac{3}{4}$

9. $\frac{5}{12} - \frac{1}{6}$

10. $\frac{4}{5} - \frac{7}{11}$

11. $\frac{4}{9} + \frac{5}{6}$

12. $\frac{5}{8} + \frac{2}{3}$

Evaluate each expression for $b = \frac{1}{3}$. Write your answer in simplest form.

13. $b + \frac{5}{8}$

14. $\frac{7}{9} - b$

15. $\frac{2}{7} + b$

16. $b + b$

17. $\frac{11}{12} - b$

18. $\frac{3}{4} - b$

19. There are three grades in Kyle's middle school—sixth, seventh, and eighth. One-third of the students are in sixth grade and $\frac{1}{4}$ are in seventh grade. What fraction of the schools' students are in eighth grade?
- _____

20. Sarah is making a dessert that calls for $\frac{4}{5}$ cup of crushed cookies. If she has already crushed $\frac{7}{10}$ cup, how much more does she need?
- _____

LESSON Practice A
5-2 Adding and Subtracting with Unlike Denominators

Write the least common denominator for each pair of fractions.

- $\frac{1}{2}, \frac{2}{4}$
- $\frac{1}{8}, \frac{2}{3}$
- $\frac{1}{6}, \frac{1}{4}$

$$\begin{array}{r} 4 \\ 1 \overline{) 4} \\ 15 \end{array}$$

$$\begin{array}{r} 24 \\ 1 \overline{) 24} \\ 20 \end{array}$$

$$\begin{array}{r} 12 \\ 1 \overline{) 12} \\ 10 \end{array}$$

14. $\frac{1}{3}, \frac{1}{5}$ 15. $\frac{1}{5}, \frac{3}{4}$ 16. $\frac{1}{5}, \frac{7}{10}$

$$\begin{array}{r} 15 \\ 1 \overline{) 15} \end{array}$$

$$\begin{array}{r} 20 \\ 1 \overline{) 20} \end{array}$$

$$\begin{array}{r} 10 \\ 1 \overline{) 10} \end{array}$$

Add or subtract. Write each answer in simplest form.

- $\frac{1}{2} + \frac{2}{3}$
- $\frac{1}{2} - \frac{1}{4}$
- $\frac{3}{4} - \frac{2}{3}$
- $\frac{2}{5} - \frac{1}{10}$
- $\frac{1}{6} + \frac{1}{3}$
- $\frac{1}{5} + \frac{7}{10}$
- $\frac{5}{8} - \frac{1}{4}$
- $\frac{1}{5} + \frac{1}{4}$
- $\frac{1}{2} - \frac{3}{8}$
- $\frac{2}{7} - \frac{1}{14}$
- $\frac{3}{5} + \frac{1}{15}$
- $\frac{5}{6} + \frac{1}{2}$

$$\begin{array}{r} 1 \frac{1}{6} \\ 1 \overline{) 1 \frac{1}{6}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{4} \\ 1 \overline{) 1 \frac{1}{4}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{12} \\ 1 \overline{) 1 \frac{1}{12}} \end{array}$$

$$\begin{array}{r} 3 \frac{1}{10} \\ 3 \overline{) 3 \frac{1}{10}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{2} \\ 1 \overline{) 1 \frac{1}{2}} \end{array}$$

$$\begin{array}{r} 1 \frac{9}{20} \\ 1 \overline{) 1 \frac{9}{20}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{8} \\ 1 \overline{) 1 \frac{1}{8}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{14} \\ 1 \overline{) 1 \frac{1}{14}} \end{array}$$

$$\begin{array}{r} 2 \frac{2}{3} \\ 2 \overline{) 2 \frac{2}{3}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{3} \\ 1 \overline{) 1 \frac{1}{3}} \end{array}$$

19. Alice practices the piano $\frac{3}{4}$ hour every day. Today, however, she practiced for $\frac{1}{2}$ hour longer than usual. How long did Alice practice the piano today?
 $1\frac{1}{4}$ hours

20. One lap around the school's track is $\frac{1}{4}$ mile. Tyler ran two times around the track. Then he ran $\frac{5}{6}$ mile home. How far did Tyler run in all?
 $1\frac{1}{3}$ miles

Copyright © by Holt, Rinehart and Winston.
 All rights reserved.

11

Holt Mathematics

LESSON Practice B
5-2 Adding and Subtracting with Unlike Denominators

Add or subtract. Write each answer in simplest form.

- $\frac{6}{7} + \frac{1}{3}$
- $\frac{3}{7} - \frac{2}{5}$
- $\frac{1}{4} + \frac{3}{8}$
- $\frac{7}{8} - \frac{2}{3}$
- $\frac{1}{6} + \frac{3}{5}$
- $\frac{5}{6} - \frac{2}{3}$
- $\frac{5}{9} - \frac{1}{3}$
- $\frac{7}{8} + \frac{3}{4}$
- $\frac{5}{12} - \frac{1}{6}$
- $\frac{4}{5} - \frac{7}{11}$
- $\frac{4}{9} + \frac{5}{6}$
- $\frac{5}{8} + \frac{2}{3}$

$$\begin{array}{r} 1 \frac{4}{21} \\ 1 \overline{) 1 \frac{4}{21}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{35} \\ 1 \overline{) 1 \frac{1}{35}} \end{array}$$

$$\begin{array}{r} 1 \frac{5}{8} \\ 1 \overline{) 1 \frac{5}{8}} \end{array}$$

$$\begin{array}{r} 5 \frac{1}{24} \\ 5 \overline{) 5 \frac{1}{24}} \end{array}$$

$$\begin{array}{r} 1 \frac{23}{30} \\ 1 \overline{) 1 \frac{23}{30}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{6} \\ 1 \overline{) 1 \frac{1}{6}} \end{array}$$

$$\begin{array}{r} 2 \frac{2}{9} \\ 2 \overline{) 2 \frac{2}{9}} \end{array}$$

$$\begin{array}{r} 1 \frac{5}{8} \\ 1 \overline{) 1 \frac{5}{8}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{4} \\ 1 \overline{) 1 \frac{1}{4}} \end{array}$$

$$\begin{array}{r} 9 \frac{9}{55} \\ 9 \overline{) 9 \frac{9}{55}} \end{array}$$

$$\begin{array}{r} 1 \frac{5}{18} \\ 1 \overline{) 1 \frac{5}{18}} \end{array}$$

$$\begin{array}{r} 1 \frac{7}{24} \\ 1 \overline{) 1 \frac{7}{24}} \end{array}$$

Evaluate each expression for $b = \frac{1}{3}$. Write your answer in simplest form.

- $b + \frac{5}{8}$
- $\frac{7}{9} - b$
- $\frac{2}{7} + b$
- $b + b$
- $\frac{11}{12} - b$
- $\frac{3}{4} - b$

$$\begin{array}{r} 23 \frac{23}{24} \\ 23 \overline{) 23 \frac{23}{24}} \end{array}$$

$$\begin{array}{r} 4 \frac{4}{9} \\ 4 \overline{) 4 \frac{4}{9}} \end{array}$$

$$\begin{array}{r} 13 \frac{13}{21} \\ 13 \overline{) 13 \frac{13}{21}} \end{array}$$

$$\begin{array}{r} 2 \frac{2}{3} \\ 2 \overline{) 2 \frac{2}{3}} \end{array}$$

$$\begin{array}{r} 7 \frac{7}{12} \\ 7 \overline{) 7 \frac{7}{12}} \end{array}$$

$$\begin{array}{r} 5 \frac{5}{12} \\ 5 \overline{) 5 \frac{5}{12}} \end{array}$$

19. There are three grades in Kyle's middle school—sixth, seventh, and eighth. One-third of the students are in sixth grade and $\frac{1}{4}$ are in seventh grade. What fraction of the schools' students are in eighth grade?
 $\frac{5}{12}$ of the students

20. Sarah is making a dessert that calls for $\frac{4}{5}$ cup of crushed cookies. If she has already crushed $\frac{7}{10}$ cup, how much more does she need?
 $\frac{1}{10}$ cup

Copyright © by Holt, Rinehart and Winston.
 All rights reserved.

12

Holt Mathematics

LESSON Practice C
5-2 Adding and Subtracting with Unlike Denominators

Evaluate. Write each answer in simplest form.

- $\frac{11}{12} + \frac{3}{5}$
- $\frac{7}{12} - \frac{5}{16}$
- $\frac{5}{6} + \frac{3}{10}$
- $\frac{3}{4} - \frac{3}{14}$
- $\frac{1}{2} + \frac{5}{17}$
- $\frac{4}{5} - \frac{2}{9}$
- $\frac{7}{8} - \frac{5}{12}$
- $\frac{3}{16} + \frac{5}{6}$
- $\frac{3}{16} + \frac{5}{32}$
- $\frac{11}{12} - \frac{4}{9} + \frac{1}{2}$
- $\frac{2}{15} + \frac{7}{25} - \frac{2}{5}$
- $\frac{3}{14} - \frac{1}{8} + \frac{4}{7}$

$$\begin{array}{r} 1 \frac{31}{60} \\ 1 \overline{) 1 \frac{31}{60}} \end{array}$$

$$\begin{array}{r} 1 \frac{13}{48} \\ 1 \overline{) 1 \frac{13}{48}} \end{array}$$

$$\begin{array}{r} 1 \frac{2}{15} \\ 1 \overline{) 1 \frac{2}{15}} \end{array}$$

$$\begin{array}{r} 1 \frac{15}{28} \\ 1 \overline{) 1 \frac{15}{28}} \end{array}$$

$$\begin{array}{r} 1 \frac{17}{27} \\ 1 \overline{) 1 \frac{17}{27}} \end{array}$$

$$\begin{array}{r} 1 \frac{26}{45} \\ 1 \overline{) 1 \frac{26}{45}} \end{array}$$

$$\begin{array}{r} 1 \frac{11}{24} \\ 1 \overline{) 1 \frac{11}{24}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{48} \\ 1 \overline{) 1 \frac{1}{48}} \end{array}$$

$$\begin{array}{r} 1 \frac{11}{32} \\ 1 \overline{) 1 \frac{11}{32}} \end{array}$$

$$\begin{array}{r} 1 \frac{35}{36} \\ 1 \overline{) 1 \frac{35}{36}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{75} \\ 1 \overline{) 1 \frac{1}{75}} \end{array}$$

$$\begin{array}{r} 1 \frac{37}{56} \\ 1 \overline{) 1 \frac{37}{56}} \end{array}$$

Evaluate each expression for $b = \frac{2}{5}$. Write your answer in simplest form.

- $b + \frac{9}{14}$
- $\frac{7}{12} - b$
- $\frac{11}{16} - b$
- $b + \frac{8}{11}$
- $\frac{4}{7} - b$
- $\frac{14}{15} + b$

$$\begin{array}{r} 1 \frac{3}{70} \\ 1 \overline{) 1 \frac{3}{70}} \end{array}$$

$$\begin{array}{r} 1 \frac{11}{60} \\ 1 \overline{) 1 \frac{11}{60}} \end{array}$$

$$\begin{array}{r} 23 \frac{23}{80} \\ 23 \overline{) 23 \frac{23}{80}} \end{array}$$

$$\begin{array}{r} 1 \frac{7}{55} \\ 1 \overline{) 1 \frac{7}{55}} \end{array}$$

$$\begin{array}{r} 6 \frac{6}{35} \\ 6 \overline{) 6 \frac{6}{35}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{3} \\ 1 \overline{) 1 \frac{1}{3}} \end{array}$$

19. Ben, Shaneeka, and Phil live on the same street. Ben lives $\frac{6}{11}$ mile north of Phil, and $\frac{1}{3}$ mile north of Shaneeka. How far does Shaneeka live from Phil?
 $\frac{7}{33}$ of a mile

20. At the frog-jumping contest, Trevor's frog jumped $\frac{5}{6}$ foot and then $\frac{5}{9}$ foot. Mei's frog jumped $\frac{4}{5}$ foot and then $\frac{1}{2}$ foot. Whose frog jumped the farthest in all? How much farther?
 Trevor's frog; $\frac{4}{45}$ foot farther

Copyright © by Holt, Rinehart and Winston.
 All rights reserved.

13

Holt Mathematics

LESSON Reteach
5-2 Adding and Subtracting with Unlike Denominators

Unlike fractions have different denominators. To add and subtract fractions, you must have a common denominator. The least common denominator (LCD) is the least common multiple of the denominators.

To add or subtract unlike fractions, first find the LCD of the fractions.

$\frac{2}{3} + \frac{1}{4}$
 Multiples of 4: 4, 8, 12, ...
 Multiples of 3: 3, 6, 9, 12, ...
 The LCD is 12.

Next, use fraction strips to find equivalent fractions.

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

$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$				
----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	--	--	--	--

$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$								
----------------	----------------	----------------	----------------	--	--	--	--	--	--	--	--

Then use fraction strips to find the sum or difference.

$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$				
----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	--	--	--	--

$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$									
----------------	----------------	----------------	--	--	--	--	--	--	--	--	--

$\frac{8}{12} + \frac{3}{12} = \frac{11}{12}$
 So, $\frac{2}{3} + \frac{1}{4} = \frac{11}{12}$.

Use fraction strips to find each sum or difference. Write your answer in simplest form.

- $\frac{1}{4} + \frac{1}{8}$
- $\frac{5}{6} - \frac{2}{3}$
- $\frac{3}{4} - \frac{1}{3}$
- $\frac{3}{5} + \frac{3}{10}$
- $\frac{3}{4} + \frac{1}{6}$
- $\frac{1}{2} + \frac{3}{8}$
- $\frac{2}{3} - \frac{1}{6}$
- $\frac{1}{3} - \frac{1}{4}$

$$\begin{array}{r} 3 \frac{3}{8} \\ 3 \overline{) 3 \frac{3}{8}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{6} \\ 1 \overline{) 1 \frac{1}{6}} \end{array}$$

$$\begin{array}{r} 5 \frac{5}{12} \\ 5 \overline{) 5 \frac{5}{12}} \end{array}$$

$$\begin{array}{r} 9 \frac{9}{10} \\ 9 \overline{) 9 \frac{9}{10}} \end{array}$$

$$\begin{array}{r} 11 \frac{11}{12} \\ 11 \overline{) 11 \frac{11}{12}} \end{array}$$

$$\begin{array}{r} 7 \frac{7}{8} \\ 7 \overline{) 7 \frac{7}{8}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{2} \\ 1 \overline{) 1 \frac{1}{2}} \end{array}$$

$$\begin{array}{r} 1 \frac{1}{12} \\ 1 \overline{) 1 \frac{1}{12}} \end{array}$$

Copyright © by Holt, Rinehart and Winston.
 All rights reserved.

14

Holt Mathematics