

EXERCISES

? For more practice, see *Extra Practice*.

A Practice by Example

Example 1
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$$1. 6\frac{2}{5} + 1\frac{4}{5} = 7\frac{6}{5}$$

$$2. 9\frac{3}{7} + 1\frac{2}{7}$$

$$3. 3\frac{3}{8} + 4\frac{5}{8}$$

$$4. 11\frac{10}{11} + 3\frac{5}{11}$$

$$5. 7\frac{1}{3} + 2\frac{2}{3}$$

$$6. 5\frac{1}{13} + 8\frac{8}{13}$$

$$7. 6\frac{9}{15} + 2\frac{12}{15}$$

Example 2
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$$8. 6\frac{2}{5} + 1\frac{4}{10}$$

$$9. 9\frac{1}{2} + 9\frac{1}{3}$$

$$10. 7\frac{1}{6} + 8\frac{1}{8}$$

$$11. 6\frac{1}{2} + 4\frac{5}{6}$$

$$12. 8\frac{3}{4} + 8\frac{1}{8}$$

$$13. 5\frac{5}{9} + 9\frac{1}{3}$$

$$14. 17\frac{3}{4} + 3\frac{3}{8}$$

$$15. 17\frac{2}{5} + 11\frac{3}{4}$$

16. **Construction** A bolt must go through a sign and a support that together are $2\frac{1}{8}$ in. thick. An additional $\frac{5}{16}$ in. is needed for the washer and the nut. How long should the bolt be?

Example 3
(page 198)

Find each difference.

$$17. 7\frac{2}{3} - 1\frac{1}{6}$$

$$18. 15 - 3\frac{3}{4}$$

$$19. 15\frac{3}{4} - 8\frac{3}{8}$$

$$20. 6\frac{9}{10} - 3\frac{2}{5}$$

$$21. 9\frac{1}{2} - \frac{2}{3}$$

$$22. 14 - 5\frac{1}{5}$$

$$23. 15\frac{1}{3} - 9\frac{1}{2}$$

$$24. 6\frac{3}{8} - 2\frac{3}{4}$$

B Apply Your Skills

25. **Calculator** You can use this key sequence to find $5\frac{1}{2} + 4\frac{3}{4}$.

$\boxed{5} \boxed{+} \boxed{1} \boxed{\div} \boxed{2} \boxed{+} \boxed{4} \boxed{+} \boxed{3} \boxed{\div} \boxed{4} \boxed{=}$ 10.25

The calculator display 10.25 can be written as $10\frac{1}{4}$.

- a. Write a key sequence you can use to find $4\frac{1}{8} - 1\frac{3}{4}$.
 b. Use your key sequence to find $4\frac{1}{8} - 1\frac{3}{4}$.
26. **Hiking** On Saturday you hiked $4\frac{3}{8}$ mi. On Sunday, you hiked $3\frac{1}{2}$ mi. How far did you hike during the weekend?

Find each sum or difference.

$$27. 8\frac{3}{15} - 5\frac{2}{15}$$

$$28. 10 - 5\frac{18}{19}$$

$$29. 11\frac{3}{4} + 15\frac{3}{4}$$

$$30. 30\frac{2}{3} + 12\frac{3}{4}$$

$$31. 13\frac{5}{8} + 25\frac{1}{2}$$

$$32. 18\frac{1}{8} - 9\frac{3}{4}$$

$$33. 6\frac{11}{20} - 4\frac{9}{10}$$

$$34. 16\frac{7}{8} - 14\frac{3}{4}$$

$$35. 24 - 19\frac{3}{5}$$

$$36. 2\frac{11}{29} + 10$$

$$37. 19\frac{11}{12} - 16\frac{3}{4}$$

$$38. 22\frac{4}{5} + 44\frac{4}{7}$$

39. **Error Analysis** A student subtracted $10\frac{1}{7} - 3\frac{5}{7}$ and got $6\frac{6}{7}$. Find the correct answer. What mistake do you think the student made?
40. **Writing in Math** Can you add mixed numbers by first changing them to decimals? Explain.
41. **Advertising** A newspaper has the following advertising space available: $2\frac{7}{8}$ c.i. (column inches), $3\frac{1}{2}$ c.i., and $4\frac{1}{4}$ c.i.
 a. What is the total number of column inches available?
 b. At \$20 per column inch, what is the cost of the $4\frac{1}{4}$ c.i. space?



Real-World Connection

The distance a hiker can walk is influenced by the difficulty of the terrain and the amount of weight the hiker carries.

42. **Party Planning** Your punch bowl holds 6 qt. Is it large enough to hold all the ingredients called for in the recipe at the right? Explain.

Lemon Raspberry Fizz



$2\frac{1}{4}$ qt ginger ale • $1\frac{2}{3}$ qt lemon sherbet
 $1\frac{1}{2}$ qt lemonade • $\frac{1}{2}$ qt raspberry juice

43. **Data File, p.185** Use the data for maximum depth. Find the difference between the depths of the Grand Canyon and Black Canyon.

Challenge

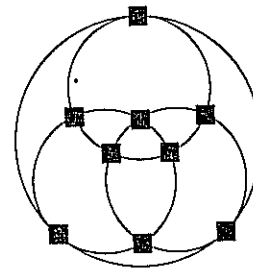
Evaluate each expression for $a = 2\frac{1}{28}$, $b = 7\frac{1}{2}$, and $c = 5\frac{3}{7}$.

44. $a + b + c$ 45. $b - c - a$ 46. $(b + c) - (a + a)$

47. **Number Sense** $9\frac{x}{17} - 3\frac{y}{17} =$ a whole number. List three possible pairs of values for x and y for which $x \neq y$.

48. **Geometry** Figures A and B have a total area of $5\frac{3}{4}$ in.². Figure A's area is $1\frac{1}{4}$ in.² greater than Figure B's area. Find the areas of both figures.

49. **Stretch Your Thinking** Copy the figure. Write the numbers 2, 3, 4, 5, 6, 7, 8, 9, and 10 in the squares, using each number only once, so that the numbers in the squares on each of the four circles have a sum of 27.



Test Prep

Multiple Choice

50. How many hours are there from 10:00 A.M. to 2:55 P.M.?
 A. $4\frac{11}{20}$ h B. $4\frac{55}{100}$ h C. $4\frac{11}{12}$ h D. $5\frac{1}{12}$ h
51. To get to the library, you must travel $1\frac{1}{10}$ mi down one street, $\frac{1}{2}$ mi down another street, and $\frac{2}{5}$ mi down a third street. How many miles must you travel in all to get to the library?
 F. $1\frac{4}{5}$ mi G. 2 mi H. $2\frac{1}{10}$ mi I. $2\frac{1}{2}$ mi
52. You want to be in school at 8:00 A.M. It takes you $\frac{1}{2}$ h to get dressed, 20 min to eat your breakfast, and $\frac{1}{6}$ h to bike to school. What time should you wake up?
 A. 7:10 A.M. B. 7:00 A.M. C. 6:50 A.M. D. 6:40 A.M.



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Online lesson quiz at
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 Web Code aba-0403

Short Response

53. How much heavier is $28\frac{1}{2}$ lb than $15\frac{11}{16}$ lb?
 F. $12\frac{3}{4}$ lb G. $12\frac{13}{16}$ lb H. $12\frac{7}{8}$ lb I. $13\frac{13}{16}$ lb
54. At an animal adoption center, $\frac{1}{2}$ of the animals are dogs, and $\frac{5}{16}$ are cats. (a) Explain how you can find the fraction of the animals that are neither dogs nor cats. (b) Find the fraction.