

EXERCISES

For more practice, see Extra Practice.

A Practice by Example

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

$$4. \frac{6}{7} + \frac{1}{7}$$

Example 2
(page 193)

$$8. \frac{7}{12} + \frac{1}{6}$$

$$12. \frac{3}{2} + \frac{1}{4}$$

Example 3
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$$16. \frac{4}{5} - \frac{1}{5}$$

$$20. \frac{5}{6} - \frac{1}{3}$$

Find each sum. Exercise 1 has been started for you.

$$5. \frac{1}{4} + \frac{1}{4}$$

$$9. \frac{3}{3} + \frac{5}{8}$$

$$13. \frac{5}{6} + \frac{7}{8}$$

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

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

$$10. \frac{4}{5} + \frac{7}{8}$$

$$14. \frac{7}{10} + \frac{1}{6}$$

$$3. \frac{6}{8} + \frac{3}{8}$$

$$7. \frac{4}{3} + \frac{2}{3}$$

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

$$15. \frac{11}{12} + \frac{3}{4}$$

Find each difference.

$$17. \frac{7}{10} - \frac{1}{10}$$

$$21. \frac{3}{5} - \frac{1}{4}$$

$$18. \frac{7}{10} - \frac{1}{5}$$

$$22. \frac{5}{6} - \frac{1}{2}$$

$$19. \frac{9}{10} - \frac{2}{5}$$

$$23. \frac{2}{3} - \frac{1}{4}$$

24. **Travel** The gas tank in your family's car was $\frac{9}{10}$ full when you left your house. When you arrived at your destination, the tank was $\frac{7}{15}$ full. What fraction of a tank of gas did you use during the trip?

B Apply Your Skills

Find each sum or difference.

$$25. \frac{7}{12} - \frac{1}{12}$$

$$28. \frac{7}{6} - \frac{3}{24}$$

$$31. \frac{1}{5} + \frac{3}{8}$$

$$26. \frac{5}{24} - \frac{1}{8}$$

$$29. \frac{3}{5} + \frac{1}{6}$$

$$32. \frac{3}{4} - \frac{3}{10}$$

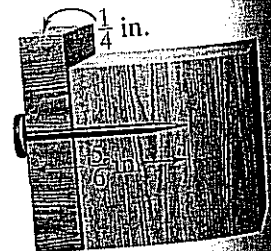
$$27. \frac{1}{2} + \frac{5}{16}$$

$$30. \frac{1}{3} - \frac{1}{15}$$

$$33. \frac{3}{6} - \frac{4}{9}$$

34. **Carpentry** Suppose you are using nails $\frac{5}{6}$ in. long to nail plywood $\frac{1}{4}$ in. thick to a beam. How much of the nail extends into the beam?

35. **Error Analysis** A student added $\frac{2}{8} + \frac{3}{8}$ and got $\frac{5}{16}$. What was the student's mistake? What is the correct answer?



Use models to find each answer.

$$36. \frac{1}{8} + \frac{1}{4}$$

$$39. \frac{1}{2} + \frac{1}{3}$$

$$37. \frac{5}{6} - \frac{1}{4}$$

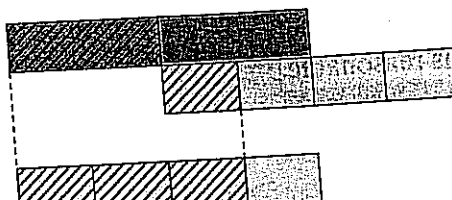
$$40. \frac{3}{4} + \frac{1}{2}$$

$$38. \frac{2}{3} - \frac{1}{4}$$

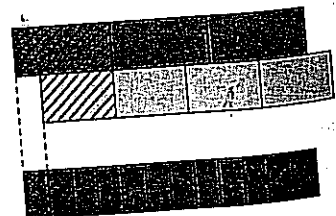
$$41. \frac{3}{4} - \frac{5}{8}$$

Write a number sentence for each model.

42.



43.



44. **Boating** You rowed $\frac{2}{3}$ mi. Your friend rowed $\frac{8}{10}$ mi. Who rowed farther? How much farther?
45. a. **Grades** One third of the students in your class got an A. One fourth of them got a B. What fraction of the students got an A or a B?
b. Did a majority of the students get either A's or B's? Explain.

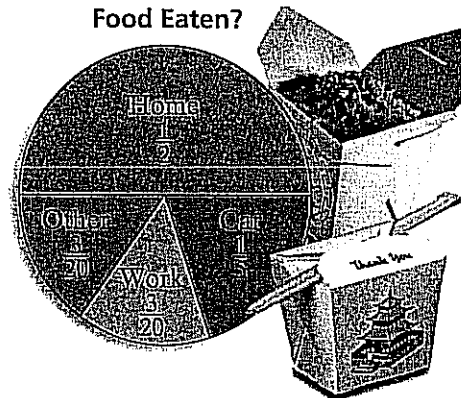
Algebra Solve each equation.

46. $\frac{2}{5} + x = \frac{7}{5}$ 47. $\frac{1}{7} + y = \frac{3}{7}$ 48. $p + \frac{4}{9} = \frac{9}{9}$
49. $\frac{1}{3} + k = \frac{5}{6}$ 50. $w + \frac{2}{5} = \frac{7}{10}$ 51. $r - \frac{4}{5} = \frac{1}{10}$

Use the circle graph for Exercises 52–55.

52. **Data Analysis** What fraction of takeout food is eaten at home or in a car?
53. How much greater is the fraction of takeout food eaten at home than the fraction eaten at work?
54. What fraction of the food is eaten at home, in a car, or at work?
55. **Writing in Math** Describe two ways to find the answer to Exercise 54.

Where Is Takeout Food Eaten?



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

3 $\frac{3}{5}$ 5 $+$ 1 $\frac{1}{4}$ 4 $=$

The answer the calculator displays, 0.85, can be rewritten as the fraction $\frac{85}{100}$, which can be simplified as $\frac{17}{20}$.

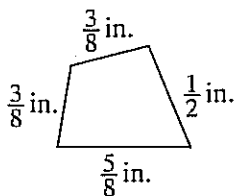
- a. Write the key sequence you could use to find $\frac{7}{8} - \frac{3}{5}$.
b. Use your key sequence to find $\frac{7}{8} - \frac{3}{5}$.

C Challenge

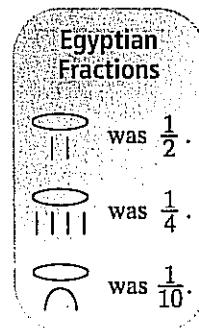
Mental Math Will each sum be *positive, negative, or zero*? Explain.

57. $-\frac{2}{3} + \frac{5}{6}$ 58. $-\frac{4}{5} + \frac{8}{10}$ 59. $-\frac{7}{8} + \frac{3}{4}$ 60. $-\frac{3}{4} + \frac{3}{5}$

61. **Geometry** Find the perimeter of the figure at the left.



62. **History** The ancient Egyptians wrote fractions, but only fractions with a numerator of 1. They expressed other fractions as sums. Use sums and the Egyptian fractions at the right to express the fractions $\frac{3}{4}$ and $\frac{3}{5}$.



63. **Stretch Your Thinking** I am a fraction in simplest form. I am greater than $\frac{1}{3}$ and less than $\frac{1}{2}$. The sum of all my digits is 8. The difference between my numerator and denominator is 7. What fraction am I?