


5.1 Exercises

FOR
EXTRA
HELP


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Write each ratio as a fraction in lowest terms. See Examples 1 and 2.

1. 8 to 9

2. 11 to 15

3. \$100 to \$50

4. 35¢ to 7¢

5. 30 minutes to 90 minutes

6. 9 pounds to 36 pounds

7. 80 miles to 50 miles

8. 300 people to 450 people

9. 6 hours to 16 hours

10. 45 books to 35 books

Write each ratio as a ratio of whole numbers in lowest terms. See Examples 3 and 4.

11. \$4.50 to \$3.50

12. \$0.08 to \$0.06

13. 15 to $2\frac{1}{2}$

14. 5 to $1\frac{1}{4}$

15. $1\frac{1}{4}$ to $1\frac{1}{2}$

16. $2\frac{1}{3}$ to $2\frac{2}{3}$

Write each ratio as a fraction in lowest terms. For help, use the table of measurement relationships on the previous page. See Example 5.

17. 4 ft to 30 in.

18. 8 ft to 4 yd

19. 5 minutes to 1 hour

20. 8 quarts to 5 pints

21. 15 hours to 2 days

22. 3 pounds to 6 ounces

23. 5 gallons to 5 quarts

24. 3 cups to 3 pints

The table shows the number of greeting cards that Americans buy for various occasions. Use the information to answer Exercises 25–30. Write each ratio as a fraction in lowest terms.

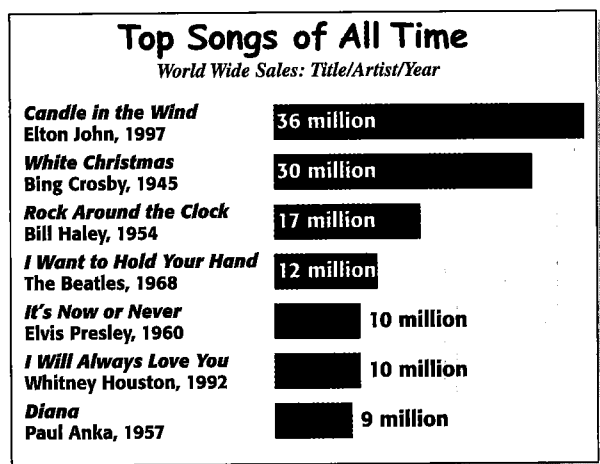
Holiday/Event	Cards Sold
Valentine's Day	900 million
Mother's Day	150 million
Father's Day	95 million
Graduation	60 million
Thanksgiving	30 million
Halloween	25 million



Source: Hallmark Cards.

25. Find the ratio of Thanksgiving cards to graduation cards.
26. Find the ratio of Halloween cards to Mother's Day cards.
27. Find the ratio of Valentine's Day cards to Halloween cards.
28. Find the ratio of Mother's Day cards to Father's Day cards.
29. Explain how you might use the information in the table if you owned a shop selling gifts and greeting cards.
30. Why is the ratio of Valentine's Day cards to graduation cards $\frac{15}{1}$? Give two possible reasons.

The bar graph shows worldwide sales of the most popular songs of all time. Use the graph to complete Exercises 31–34. Write each ratio as a fraction in lowest terms.

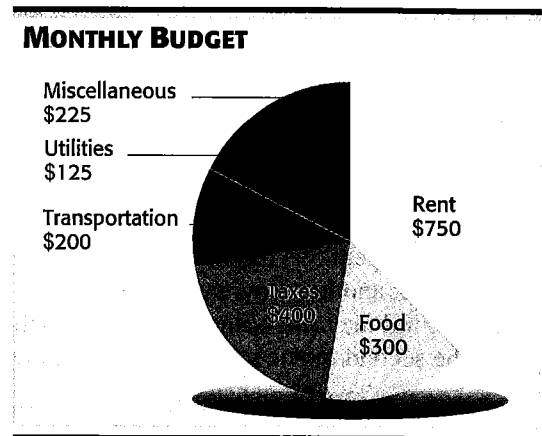


Source: The Music Information Database.

31. Write two ratios that compare the top-selling song to the second best seller and the top-selling song to the third best seller.
32. Write two ratios that compare sales of Elvis Presley's song with sales of the songs just ahead and just behind it in the graph.
33. Sales of which two songs give a ratio of $\frac{3}{1}$? There may be more than one correct answer.
34. Sales of which two songs give a ratio of $\frac{5}{6}$? There may be more than one correct answer.

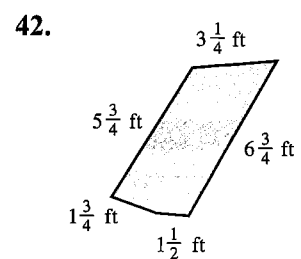
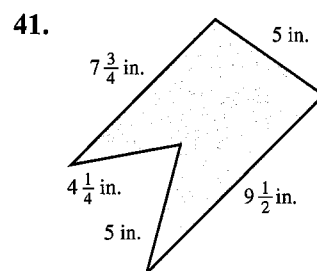
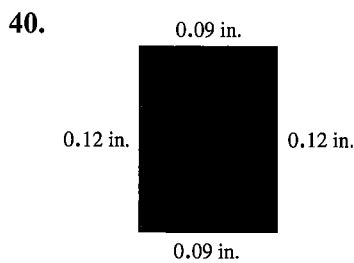
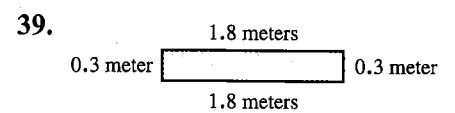
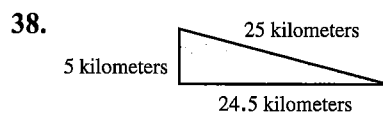
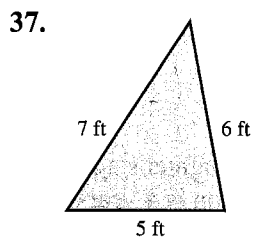
Use the circle graph of one person's monthly budget to complete Exercises 35–36.
Write each ratio as a fraction in lowest terms.

35. Find the ratio of
- (a) rent to utilities
 - (b) rent to food
 - (c) rent and utilities to total budget.



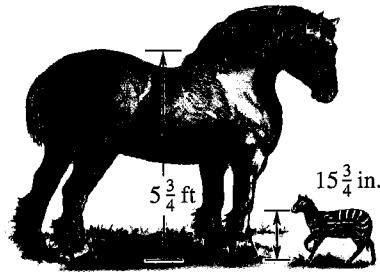
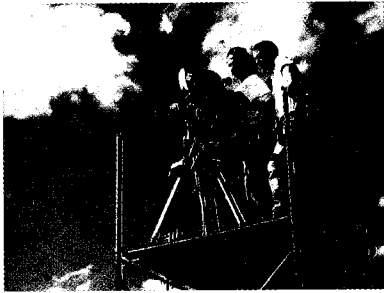
36. Find the ratio of
- (a) taxes to rent
 - (b) food to transportation
 - (c) taxes and food to rent and utilities.

For each figure, find the ratio of the length of the longest side to the length of the shortest side. Write each ratio as a fraction in lowest terms.



Write each ratio as a fraction in lowest terms.

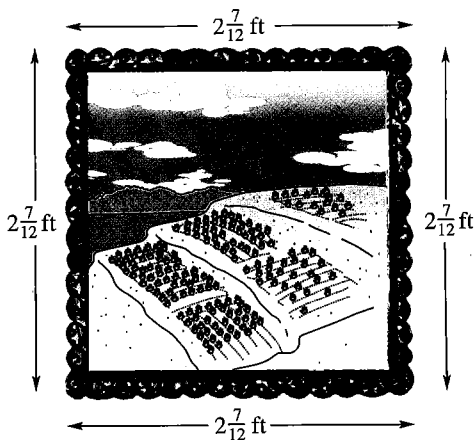
43. The price of automobile engine oil recently went from \$10.80 to \$13.50 per case of 12 quarts. Find the ratio of the increase in price to the original price.
44. The price that a pharmacy pays for an antibiotic decreased from \$8.80 to \$5.60 for 10 tablets. Find the ratio of the decrease in price to the original price.
45. The first time a movie was made in Minnesota, the cast and crew spent $59\frac{1}{2}$ days filming winter scenes. The next year, another movie was filmed in $8\frac{3}{4}$ weeks. Find the ratio of the first movie's filming time to the second movie's time. Compare in weeks.
46. The percheron, a large draft horse, measures about $5\frac{3}{4}$ ft at the shoulder. The prehistoric ancestor of the horse measured only $15\frac{3}{4}$ in. at the shoulder. Find the ratio of the percheron's height to its prehistoric ancestor's height. Compare in inches. (Source: *Eyewitness Books: Horse.*)



RELATING CONCEPTS (EXERCISES 47–50) For Individual or Group Work

Use your knowledge of ratios to work Exercises 47–50 in order.

47. In this painting, what is the ratio of the length of the longest side to the length of the shortest side? What other measurements could the painting have and still maintain the same ratio?
48. The ratio of my son's age to my daughter's age is 4 to 5. One possibility is that my son is 4 years old and my daughter is 5 years old. Find six other possibilities that fit the 4 to 5 ratio.



49. Amelia said that the ratio of her age to her mother's age is 5 to 3. Is this possible? Explain your answer.
50. Would you prefer that the ratio of your income to your friend's income be 1 to 3 or 3 to 1? Explain your answers.