

EXERCISES

For more practice, see *Extra Practice*.

A Practice by Example

Example 1
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Find each product. Exercise 1 has been started for you.

$$1. \frac{1}{2} \cdot \frac{2}{3} = \frac{1 \cdot 2}{2 \cdot 3}$$

$$2. \frac{1}{4} \cdot \frac{3}{5}$$

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

$$4. \frac{1}{4} \cdot \frac{8}{9}$$

$$5. \frac{1}{8} \cdot \frac{4}{5}$$

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

$$7. \frac{2}{3} \cdot \frac{4}{9}$$

Example 2
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Simplify before finding each product.

$$8. \frac{2}{3} \cdot \frac{3}{4}$$

$$9. \frac{1}{6} \cdot \frac{3}{5}$$

$$10. \frac{2}{3} \cdot \frac{1}{2}$$

$$11. \frac{2}{5} \cdot \frac{10}{11}$$

$$12. \frac{1}{12} \cdot \frac{8}{9}$$

$$13. \frac{7}{8} \cdot \frac{4}{5}$$

$$14. \frac{2}{5} \cdot \frac{15}{16}$$

$$15. \frac{5}{8} \cdot \frac{8}{9}$$

16. The cover of your textbook is $\frac{3}{4}$ ft by $\frac{5}{6}$ ft. What is its area?

Example 3
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Find each product.

$$17. \frac{1}{4} \text{ of } 12$$

$$18. 9 \cdot \frac{1}{3}$$

$$19. \frac{2}{3} \text{ of } 18$$

$$20. \frac{2}{5} \cdot 10$$

$$21. \frac{3}{4} \cdot 16$$

$$22. \frac{3}{5} \text{ of } 15$$

Example 4
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$$23. 1\frac{3}{10} \cdot 6\frac{2}{3}$$

$$24. 1\frac{3}{8} \cdot 2\frac{2}{3}$$

$$25. 3\frac{1}{3} \cdot 1\frac{1}{4}$$

$$26. 2\frac{1}{2} \cdot 1\frac{3}{5}$$

$$27. 4\frac{2}{3} \cdot \frac{3}{4}$$

$$28. 5\frac{1}{4} \cdot 2\frac{2}{7}$$

B Apply Your Skills

29. **Error Analysis** A student multiplies two mixed numbers, $2\frac{3}{5}$ and $1\frac{1}{3}$, and finds the product to be $2\frac{3}{15}$. Explain the student's mistake. What is the correct answer?

30. **Science** As a roller coaster car reaches the bottom of a slope and begins to go up the next slope, its acceleration, combined with the downward pull of gravity, can make a person feel $3\frac{1}{2}$ times as heavy. This sensation is called "supergravity."
- How heavy would a 120-lb person experiencing supergravity feel in the roller coaster described above?
 - How heavy would a 150-lb person feel?

Algebra Evaluate each expression for $a = \frac{3}{8}$ and $b = 2\frac{2}{5}$.

$$31. \frac{1}{3}a$$

$$32. 2\frac{2}{5}b$$

$$33. 1\frac{1}{6}a$$

$$34. \frac{5}{6}a$$

$$35. a \cdot b$$

$$36. a \cdot 16$$

$$37. 5b$$

$$38. b \cdot \frac{5}{12}$$

$$39. b \cdot 50$$

$$40. b \cdot a$$

$$41. \frac{8}{3}a$$

$$42. b \cdot b$$

43. **Writing in Math** How does multiplying two fractions differ from adding two fractions?

44. **Fitness** The length of a track around a football field is $\frac{1}{4}$ mi. You jog $3\frac{3}{4}$ times around the track. How far do you jog?



Real-World Connection

Roller coasters can reach speeds as great as 100 mi/h.