Check It Out
Vocabulary Help
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Review Key Vocabulary

underestimate, *p. 47* reciprocals, *p. 72*
overestimate, *p. 47* terminating decimal, *p. 84*
compatible numbers, *p. 47* repeating decimal, *p. 92*

Review Examples and Exercises

2.1 Fractions and Estimation *(pp. 44–49)*

$$3\frac{1}{5} \times 4\frac{7}{8} \approx 3 \times 5 = 15$$ Round $3\frac{1}{5}$ to 3 and round $4\frac{7}{8}$ to 5.

Exercises

Estimate the product or quotient.

1. $\dfrac{4}{5} \times \dfrac{2}{3}$ **2.** $\dfrac{1}{8} \times \dfrac{6}{11}$ **3.** $6\dfrac{4}{15} \div 2\dfrac{7}{8}$ **4.** $14\dfrac{5}{6} \div 4\dfrac{10}{13}$

2.2 Multiplying Fractions and Whole Numbers *(pp. 50–55)*

$$4 \times \frac{5}{6} = \frac{4 \times 5}{6}$$ Multiply the numerator and whole number.
Write the product over the denominator.

$$= \frac{20}{6} = \frac{10}{3}, \text{ or } 3\frac{1}{3}$$ Simplify.

Exercises

Multiply. Write the answer in simplest form.

5. $3 \times \dfrac{1}{5}$ **6.** $8 \times \dfrac{2}{3}$ **7.** $\dfrac{4}{7} \times 6$ **8.** $\dfrac{5}{6} \times 9$

2.3 Multiplying Fractions *(pp. 56–61)*

$$\frac{1}{4} \times \frac{3}{5} = \frac{1 \times 3}{4 \times 5} = \frac{3}{20}$$ Multiply the numerators and the denominators.

Exercises

Multiply. Write the answer in simplest form.

9. $\dfrac{1}{8} \times \dfrac{5}{7}$ **10.** $\dfrac{3}{5} \times \dfrac{1}{2}$ **11.** $\dfrac{2}{9} \times \dfrac{3}{4}$ **12.** $\dfrac{3}{10} \times \dfrac{4}{5}$

Multiplying Mixed Numbers *(pp. 62–67)*

$$\frac{3}{5} \times 1\frac{1}{8} = \frac{3}{5} \times \frac{9}{8}$$

Write $1\frac{1}{8}$ as the improper fraction $\frac{9}{8}$.

$$= \frac{3 \times 9}{5 \times 8} = \frac{27}{40}$$

Multiply the numerators and denominators.

Exercises

Multiply. Write the answer in simplest form.

13. $2\frac{2}{3} \times \frac{4}{5}$

14. $\frac{2}{7} \times 4\frac{4}{9}$

15. $1\frac{5}{6} \times 2\frac{3}{8}$

16. $2\frac{3}{10} \times 5\frac{1}{3}$

2.5 **Dividing Fractions** *(pp. 70–77)*

$$\frac{3}{7} \div \frac{5}{8} = \frac{3}{7} \times \frac{8}{5}$$

Multiply by the reciprocal of $\frac{5}{8}$, which is $\frac{8}{5}$.

$$= \frac{3 \times 8}{7 \times 5} = \frac{24}{35}$$

Multiply fractions and simplify.

Exercises

Divide. Write the answer in simplest form.

17. $\frac{1}{9} \div \frac{2}{5}$

18. $\frac{3}{4} \div \frac{5}{6}$

19. $5 \div \frac{1}{3}$

20. $\frac{8}{9} \div \frac{3}{10}$

2.6 **Dividing Mixed Numbers** *(pp. 78–83)*

$$3\frac{3}{4} \div 1\frac{1}{2} = \frac{15}{4} \div \frac{3}{2}$$

Write each mixed number as an improper fraction.

$$= \frac{15}{4} \times \frac{2}{3}$$

Multiply by the reciprocal of $\frac{3}{2}$, which is $\frac{2}{3}$.

$$= \frac{\overset{5}{\cancel{15}} \times \overset{1}{\cancel{2}}}{\underset{2}{\cancel{4}} \times \underset{1}{\cancel{3}}}$$

Multiply fractions. Divide out common factors.

$$= \frac{5}{2}, \text{ or } 2\frac{1}{2}$$

Simplify.

Exercises
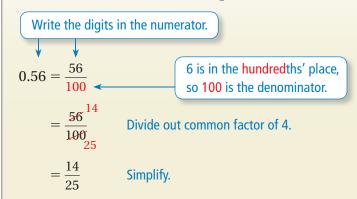
Divide. Write the answer in simplest form.

21. $1\frac{2}{5} \div \frac{4}{7}$

22. $2\frac{3}{8} \div \frac{3}{5}$

23. $4\frac{1}{8} \div 2\frac{1}{4}$

24. $5\frac{5}{8} \div 1\frac{2}{9}$

2.7 **Writing Decimals as Fractions** *(pp. 84–89)*

Write 0.56 as a fraction in simplest form.

Write the digits in the numerator.

$0.56 = \dfrac{56}{100}$ 6 is in the hundredths' place, so 100 is the denominator.

$= \dfrac{\overset{14}{\cancel{56}}}{\underset{25}{\cancel{100}}}$ Divide out common factor of 4.

$= \dfrac{14}{25}$ Simplify.

Exercises

Write the decimal as a fraction or mixed number in simplest form.

25. 0.6   **26.** 0.24   **27.** 0.08   **28.** 3.155

2.8 **Writing Fractions as Decimals** *(pp. 90–95)*

Write $\dfrac{1}{6}$ as a decimal.

Place the decimal point.

$$
\begin{array}{r}
0.166 \\
6\overline{)1.000} \\
\underline{-\ 6} \\
40 \\
\underline{-\ 36} \\
40 \\
\underline{-\ 36} \\
4
\end{array}
$$

Place zeros to complete the division.

The remainder 4 keeps repeating.

∴ So, $\dfrac{1}{6} = 1 \div 6 = 0.166\ldots,$ or $0.1\overline{6}.$

Exercises

Write the fraction as a decimal. Is it terminating or repeating?

29. $\dfrac{3}{5}$ **30.** $\dfrac{7}{8}$ **31.** $\dfrac{2}{9}$ **32.** $\dfrac{7}{6}$

33. **MINIATURE GOLF** During a round of miniature golf, you made par on $\dfrac{11}{18}$ of the holes. Write this fraction as a decimal.