



4-6 Simplifying Fractions (Pages 196–199)

A **ratio** is a comparison of two numbers by division. You can express a ratio in several ways. For example, 2 to 3, $2:3$, $\frac{2}{3}$, and $2 \div 3$ all represent the same ratio.

Simplifying Fractions	A ratio is most often written as a fraction in simplest form . A fraction is in simplest form when the GCF of the numerator and denominator is 1. You can also write algebraic fractions that have variables in the numerator or denominator in simplest form.
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EXAMPLES

A Write $\frac{8}{12}$ in simplest form.

Find the GCF of 8 and 12.

$$8 = 2 \cdot 2 \cdot 2$$

$$12 = 2 \cdot 2 \cdot 3$$

The GCF is $2 \cdot 2$ or 4.

Divide numerator and denominator by 4.

$$\frac{8 \div 4}{12 \div 4} = \frac{2}{3}$$

B Simplify $\frac{15ab^2}{20a^2b}$.

$$\frac{15ab^2}{20a^2b} = \frac{3 \cdot 5 \cdot a \cdot b \cdot b}{2 \cdot 2 \cdot 5 \cdot a \cdot a \cdot b}$$

Divide numerator and denominator by $5 \cdot a \cdot b$.

$$\frac{15ab^2}{20a^2b} = \frac{\overset{1}{3} \cdot \overset{1}{a} \cdot \overset{1}{b} \cdot b}{2 \cdot 2 \cdot \underset{1}{a} \cdot \underset{1}{a} \cdot \underset{1}{b}} \text{ OR } \frac{3b}{4a}$$

Try These Together

1. Write $\frac{8}{16}$ in simplest form.

HINT: Divide the numerator and denominator by the GCF of 8 and 16.

2. Simplify $\frac{6x}{15x^2}$.

HINT: Divide the numerator and denominator by the GCF of $6x$ and $15x^2$.

PRACTICE

Write each fraction in simplest form. If the fraction is already in simplest form, write simplified.

3. $\frac{16}{24}$

4. $\frac{10}{45}$

5. $\frac{7}{24}$

6. $\frac{22}{26}$

7. $\frac{12}{21}$

8. $\frac{4}{28}$

9. $\frac{40}{50}$

10. $\frac{24}{35}$

11. $\frac{4x}{8x}$

12. $\frac{3m}{27}$

13. $\frac{8ab^2}{10ab}$

14. $\frac{7x^2}{15x}$

15. Exchange Rates Exchange rates fluctuate daily. Write the ratio of British pounds to American dollars using an exchange rate of £1.00 to \$1.60. Simplify your answer.



16. Standardized Test Practice Which of the following is in simplest form?

A $\frac{6}{15}$

B $\frac{10}{14}$

C $\frac{21}{35}$

D $\frac{8}{15}$

Answers: 1. $\frac{2}{1}$	2. $\frac{5x}{2}$	3. $\frac{3}{2}$	4. $\frac{9}{2}$	5. simplified	6. $\frac{13}{11}$	7. $\frac{7}{4}$	8. $\frac{7}{4}$	9. $\frac{5}{4}$	10. simplified	11. $\frac{2}{1}$	12. $\frac{9}{m}$	13. $\frac{5}{4b}$	14. $\frac{7x}{15}$	15. $\frac{5}{8}$	16. D
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