

Simplifying Fractions and Ratios

(pages 154–157)

A **ratio** is a comparison of two numbers by division. You can write the ratio of 3 to 9 as 3:9 or as the fraction $\frac{3}{9}$. You can simplify the fraction $\frac{3}{9}$ by dividing both the numerator and denominator by 3. A fraction is in **simplest form** when the GCF of the numerator and denominator is 1.

Simplifying Fractions

To write a fraction in simplest form:

- find the GCF of the numerator and denominator,
- divide both the numerator and denominator by the GCF, and
- write the resulting fraction.

EXAMPLES

A Express $\frac{6}{12}$ in simplest form.

The GCF of 6 and 12 is 6.

Divide the numerator (6) by 6 to get 1.

Divide the denominator (12) by 6 to get 2.

$\frac{6}{12}$ in simplest form is $\frac{1}{2}$.

B Express 18:24 in simplest form.

The GCF of 18 and 24 is 6.

Divide 18 by 6. Divide 24 by 6.

18:24 in simplest form is 3:4.

Try These Together

1. Express $\frac{25}{45}$ in simplest form.

HINT: The GCF of 25 and 45 is 5.

2. Express 3:15 in simplest form.

HINT: What is the GCF of 3 and 15?

PRACTICE

Express each fraction or ratio in simplest form.

3. $\frac{82}{94}$

4. $\frac{54}{63}$

5. $\frac{48}{16}$

6. $\frac{55}{105}$

7. 12:60

8. 10:148

9. 14:62

10. $\frac{8}{72}$

11. Life Science There are 2,900 species of jellyfish. They are made up of 2 classes, the hydrozoan and the scyphozoan. There are 200 species of scyphozoan. Express the number of species of scyphozoan to the total number of jellyfish species as a ratio in simplest form.



12. Standardized Test Practice Akikta has \$1,200 in his checking account and \$300 in his savings account. Express the amount of money in his checking account to the amount of money in his savings account as a ratio in simplest form.

A 4:1

B 3:4

C 1:4

D 3:1

Answers: 1. $\frac{6}{5}$ 2. 1:5 3. $\frac{47}{41}$ 4. $\frac{7}{6}$ 5. $\frac{1}{3}$ 6. $\frac{21}{11}$ 7. 1:5 8. 5:74 9. 7:31 10. $\frac{6}{1}$ 11. 2:29 12. A