

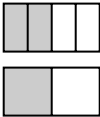
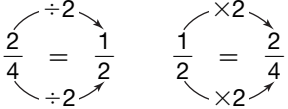


Name _____ Date _____

Simplifying Fractions and Ratios

(pages 193–196)

A **ratio** is a comparison of two numbers by division. Ratios can also be expressed as fractions, such as $\frac{2}{4}$. You can write the fraction $\frac{2}{4}$ as $\frac{1}{2}$ and also as $\frac{4}{8}$. These fractions are **equivalent fractions**, because they name the same number. Use equivalent fractions to write fractions in **simplest form**. A fraction is in simplest form when the GCF of the numerator and denominator is 1.

Method 1 for Finding Equivalent Fractions: Use a Model	 <p>Two out of four, or $\frac{2}{4}$ of the parts of the rectangle are shaded. One out of two, or $\frac{1}{2}$ of the parts of the rectangle is shaded. The rectangles are the same size, and the same amount of each is shaded, so the fractions are equivalent.</p>
Method 2 for Finding Equivalent Fractions: Use Paper and Pencil	 <p>Multiply or divide both the numerator and the denominator of a fraction by the same nonzero number.</p>

EXAMPLES

Replace each \blacksquare with a number so that the fractions are equivalent.

A $\frac{2}{3} = \frac{6}{\blacksquare}$

Since $2 \times 3 = 6$, multiply the denominator also by 3.

$$\frac{2}{3} = \frac{6}{9}$$

B $\frac{15}{20} = \frac{\blacksquare}{4}$

Since $20 \div 5 = 4$, divide the numerator also by 5.

$$\frac{15}{20} = \frac{3}{4}$$

Try These Together

1. $\frac{5}{6} = \frac{20}{\blacksquare}$

HINT: Multiply the numerator and denominator by the same number.

2. Write $\frac{10}{12}$ in simplest form.

HINT: The GCF of the numerator and denominator must be 1.

PRACTICE

Replace each \blacksquare with a number so that the fractions are equivalent.

3. $\frac{2}{3} = \frac{18}{\blacksquare}$

4. $\frac{8}{24} = \frac{\blacksquare}{3}$

5. $\frac{5}{6} = \frac{30}{\blacksquare}$



6. **Standardized Test Practice** What is $\frac{27}{30}$ in simplest form?

A $\frac{2}{3}$

B $\frac{9}{15}$

C $\frac{22}{24}$

D $\frac{9}{10}$

Answers: 1. 24 2. $\frac{5}{6}$ 3. 27 4. 1 5. 36 6. D