



Name \_\_\_\_\_ Date \_\_\_\_\_

## Dividing Fractions (pages 285–288)

Any two numbers whose product is 1 are called **reciprocals**. For example,  $\frac{1}{2}$  and 2 are reciprocals because  $\frac{1}{2} \cdot 2 = 1$ . You use reciprocals when you divide by fractions.

<b>Dividing Fractions</b>	To divide by a fraction, multiply by its reciprocal.
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### EXAMPLES

**A** Find the reciprocal of  $\frac{2}{3}$ .

Since  $\frac{2}{3} \cdot \frac{3}{2} = 1$ , the

reciprocal of  $\frac{2}{3}$  is  $\frac{3}{2}$ .

**B** Find  $\frac{4}{5} \div \frac{1}{3}$ .

$\frac{4}{5} \div \frac{1}{3} = \frac{4}{5} \times \frac{3}{1}$  Multiply by the reciprocal of  $\frac{1}{3}$ .

$= \frac{12}{5}$  or  $2\frac{2}{5}$  Multiply the numerators and denominators. Rewrite the improper fraction as a mixed number.

### Try These Together

1. Find the reciprocal of  $\frac{2}{7}$ .

*HINT: What times  $\frac{2}{7}$  equals 1?*

2. Find  $\frac{7}{8} \div \frac{3}{4}$ .

*HINT: Multiply by the reciprocal. Simplify before you multiply.*

### PRACTICE

Find each quotient. Write in simplest form.

3.  $\frac{1}{8} \div \frac{1}{2}$

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

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

6.  $\frac{1}{14} \div \frac{1}{7}$

7.  $\frac{1}{7} \div \frac{1}{8}$

8.  $\frac{9}{10} \div \frac{2}{5}$

Solve each equation. Write the solution in simplest form.

9.  $p = \frac{1}{3} \div \frac{3}{4}$

10.  $q = \frac{5}{8} \div \frac{1}{6}$

11.  $n = \frac{4}{9} \div \frac{1}{5}$

12.  $d = \frac{2}{9} \div \frac{3}{4}$

13.  $z = \frac{1}{2} \div \frac{1}{16}$

14.  $s = \frac{4}{5} \div \frac{3}{8}$



**15. Standardized Test Practice** After the initial fee of \$2.00, a taxi ride costs \$0.25 per  $\frac{1}{5}$  mile. How much would a 4 mile cab ride cost, including the initial fee?

**A** \$5.00

**B** \$3.00

**C** \$20.00

**D** \$7.00

Answers: 1.  $\frac{7}{2}$  2.  $1\frac{1}{3}$  3.  $\frac{4}{3}$  4.  $6\frac{3}{4}$  5.  $\frac{4}{3}$  6.  $\frac{2}{1}$  7.  $1\frac{1}{7}$  8.  $2\frac{4}{7}$  9.  $\frac{9}{4}$  10.  $3\frac{4}{3}$  11.  $2\frac{2}{3}$  12.  $\frac{27}{8}$  13. 8 14.  $2\frac{15}{8}$  15. D