

**5.5 Multiplying Fractions**MATHPOWER™ *Eight*, pp. 190–191

To multiply fractions, multiply the numerators and multiply the denominators.

$$\begin{aligned}
 2\frac{1}{3} \times 1\frac{4}{5} &= \frac{7}{3} \times \frac{9}{5} \leftarrow \text{Write mixed numbers as improper fractions first.} \\
 &= \frac{63}{15} \\
 &= \frac{21}{5} \text{ or } 4\frac{1}{5}
 \end{aligned}$$

Two numbers whose product is 1 are called **reciprocals**.Since  $\frac{3}{5} \times \frac{5}{3} = \frac{15}{15}$  or 1,  $\frac{3}{5}$  and  $\frac{5}{3}$  are reciprocals.**Express all answers in lowest terms.***Multiply.*

1.  $\frac{1}{2} \times \frac{1}{4}$  \_\_\_\_\_ 2.  $\frac{2}{3} \times \frac{1}{5}$  \_\_\_\_\_

3.  $\frac{3}{4} \times \frac{4}{5}$  \_\_\_\_\_ 4.  $\frac{7}{10} \times \frac{2}{3}$  \_\_\_\_\_

5.  $\frac{1}{6} \times \frac{3}{8}$  \_\_\_\_\_ 6.  $\frac{2}{7} \times \frac{1}{2}$  \_\_\_\_\_

*Calculate.*

7.  $\frac{1}{3}$  of 9 \_\_\_\_\_ 8.  $\frac{3}{8}$  of 12 \_\_\_\_\_

9.  $\frac{1}{10}$  of  $\frac{4}{5}$  \_\_\_\_\_ 10.  $\frac{3}{5}$  of  $\frac{2}{3}$  \_\_\_\_\_

*Estimate, then multiply.*

11.  $4 \times 1\frac{1}{8}$  \_\_\_\_\_ 12.  $2 \times 2\frac{1}{4}$  \_\_\_\_\_

13.  $5 \times 2\frac{1}{2}$  \_\_\_\_\_ 14.  $4 \times 1\frac{3}{4}$  \_\_\_\_\_

15.  $1\frac{3}{4} \times 2\frac{2}{3}$  \_\_\_\_\_ 16.  $3\frac{1}{8} \times 1\frac{1}{6}$  \_\_\_\_\_

17.  $4\frac{2}{5} \times 2\frac{3}{10}$  \_\_\_\_\_ 18.  $2\frac{1}{2} \times 5\frac{5}{9}$  \_\_\_\_\_

19.  $1\frac{3}{7} \times 3\frac{5}{6}$  \_\_\_\_\_ 20.  $3\frac{1}{2} \times 3\frac{1}{2}$  \_\_\_\_\_

*Multiply.*

21.  $\frac{2}{3} \times 3 \times \frac{1}{8}$  \_\_\_\_\_

22.  $\frac{1}{2} \times 4 \times \frac{4}{5}$  \_\_\_\_\_

23.  $1\frac{1}{7} \times 2\frac{1}{2} \times 1\frac{7}{8}$  \_\_\_\_\_

24.  $7 \times 3\frac{2}{3} \times 1\frac{1}{4}$  \_\_\_\_\_

*Write the reciprocal.*

25.  $\frac{3}{4}$  \_\_\_\_\_ 26.  $\frac{3}{2}$  \_\_\_\_\_

27.  $\frac{2}{7}$  \_\_\_\_\_ 28.  $2\frac{1}{6}$  \_\_\_\_\_

29.  $3\frac{2}{7}$  \_\_\_\_\_ 30.  $4\frac{1}{4}$  \_\_\_\_\_

*Find the missing value.*

31.  $\frac{4}{5} \times 1\frac{1}{4} = \square$  32.  $1 = \frac{3}{4} \times \square$

33.  $\square \times 3\frac{1}{2} = 1$  34.  $8 \times \square = 1$

35.  $\frac{3}{4} \times \square = \frac{2}{3} \times 1\frac{1}{2}$

36.  $4 \times \frac{1}{4} = \square \times 6$

