Reciprocals

Name _____

Date _____

Find the reciprocal.

$9 = \frac{9}{1}$ $\frac{9}{1} \rightarrow \frac{1}{9}$

$\frac{\overset{1}{\cancel{9}}}{1} \times \frac{1}{\underset{1}{\cancel{9}}} = \frac{1}{1} = 1$

$\frac{1}{9}$ is the reciprocal of 9.

$\frac{2}{3} \rightarrow \frac{3}{2}$

$\frac{\overset{1}{\cancel{2}}}{\underset{1}{\cancel{3}}} \times \frac{\overset{1}{\cancel{3}}}{\underset{1}{\cancel{2}}} = \frac{1}{1} = 1$

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

$1\frac{1}{4} = \frac{5}{4}$ $\frac{5}{4} \rightarrow \frac{4}{5}$

$\frac{\overset{1}{\cancel{5}}}{\underset{1}{\cancel{4}}} \times \frac{\overset{1}{\cancel{4}}}{\underset{1}{\cancel{5}}} = \frac{1}{1} = 1$

$\frac{4}{5}$ is the reciprocal of $1\frac{1}{4}$.

Write the missing reciprocal in each statement.

1. $8 \times \_\_\_\_ = 1$ **2.** $3 \times \_\_\_\_ = 1$ **3.** $\frac{1}{2} \times \_\_\_\_ = 1$ **4.** $\frac{1}{5} \times \_\_\_\_ = 1$

5. $\frac{7}{8} \times \_\_\_\_ = 1$ **6.** $\frac{4}{5} \times \_\_\_\_ = 1$ **7.** $1\frac{1}{2} \times \_\_\_\_ = 1$ **8.** $2\frac{1}{4} \times \_\_\_\_ = 1$

Are the numbers reciprocals? Write *Yes* or *No*.

9. 12, $\frac{1}{12}$ _____ **10.** $\frac{1}{3}$, $\frac{2}{6}$ _____ **11.** $\frac{4}{9}$, $\frac{9}{4}$ _____ **12.** $\frac{5}{8}$, $\frac{8}{5}$ _____

13. $\frac{1}{10}$, 10 _____ **14.** $2\frac{1}{5}$, $\frac{5}{11}$ _____ **15.** $3\frac{1}{2}$, $\frac{2}{5}$ _____ **16.** $1\frac{7}{8}$, $\frac{8}{15}$ _____

Write the reciprocal of each number.

17. 1 _____ **18.** 20 _____ **19.** $\frac{1}{3}$ _____ **20.** $\frac{1}{8}$ _____

21. $\frac{9}{10}$ _____ **22.** $\frac{7}{12}$ _____ **23.** $\frac{10}{3}$ _____ **24.** $\frac{9}{5}$ _____

25. $\frac{14}{9}$ _____ **26.** $1\frac{1}{6}$ _____ **27.** $2\frac{3}{4}$ _____ **28.** $3\frac{1}{5}$ _____

Problem Solving **Use the numbers in the box.**

$\frac{1}{3}$	$\frac{5}{2}$	$\frac{9}{4}$	$\frac{7}{10}$

29. Write the fractions that are less than 1. Then write their reciprocals.

_____

30. Write the fractions that are greater than 1. Then write their reciprocals.

_____

31. What number times $\frac{5}{16}$ equals 1?

_____

32. What number times 100 equals 1?

_____

33. Use the numbers 7 and 11 to write a multiplication sentence with a product of 1.

_____

Divide Whole Numbers by Fractions

Name _____

Date _____

Divide: $6 \div \frac{3}{8} = n$

$$6 \div \frac{3}{8} = \frac{6}{1} \div \frac{3}{8}$$

$$= \frac{6}{1} \times \frac{8}{3}$$

$$= \frac{\overset{2}{\cancel{6}} \times 8}{1 \times \underset{1}{\cancel{3}}} = \frac{16}{1} = 16$$

$$n = 16$$

Multiply by the reciprocal of the divisor.

Divide: $7 \div \frac{2}{5} = n$

$$7 \div \frac{2}{5} = \frac{7}{1} \div \frac{2}{5}$$

$$= \frac{7}{1} \times \frac{5}{2}$$

$$= \frac{7 \times 5}{1 \times 2} = \frac{35}{2} = 17\frac{1}{2}$$

$$n = 17\frac{1}{2}$$

Complete each division.

1. $6 \div \frac{1}{4} = \frac{6}{1} \div \frac{1}{4}$

$= \frac{6}{1} \times$ ___

= _____

2. $3 \div \frac{2}{7} = \frac{3}{1} \div \frac{2}{7}$

$= \frac{3}{1} \times$ ___

= _____

Divide.

3. $12 \div \frac{2}{3} =$ _____

4. $16 \div \frac{5}{8} =$ _____

5. $6 \div \frac{1}{3} =$ _____

6. $10 \div \frac{1}{3} =$ _____

7. $9 \div \frac{4}{5} =$ _____

8. $18 \div \frac{3}{4} =$ _____

9. $8 \div \frac{2}{5} =$ _____

10. $21 \div \frac{2}{5} =$ _____

11. $1 \div \frac{1}{3} =$ _____

12. $25 \div \frac{1}{8} =$ _____

13. $2 \div \frac{7}{10} =$ _____

14. $15 \div \frac{3}{4} =$ _____

15. $7 \div \frac{2}{5} =$ _____

16. $14 \div \frac{1}{3} =$ _____

Problem Solving

17. Lee needs pieces of wire that are each $\frac{2}{5}$ ft long. How many pieces can he cut from a 6-ft length of wire?

_____

18. A pie is divided into eight equal pieces. How many pieces would there be if it were divided into pieces only $\frac{1}{2}$ that size?

_____

Use with Lesson 6-10, pages 216–217 in the Student Book.
Then go to Lessons 6-10A and 6-10B, pages 199–202 in this Workbook.