

10.  $\frac{47}{8}$
9.  $\frac{9}{2}$
8.  $4\frac{1}{2}$
7.  $2\frac{3}{2}$
6.  $\frac{7}{1}$
5.  $\frac{20}{9}$
4.  $1\frac{1}{4}$
3.  $8\frac{5}{2}$
2.  $\frac{12}{7}$
1.  $\frac{23}{5}$
15. 13
14.  $\frac{97}{20}$
13.  $\frac{27}{4}$
12.  $\frac{82}{9}$
11.  $\frac{43}{5}$

# BASIC MATH

The Complete Course  
Lesson Eight

## Dividing Fractions Plus a Review of Fractions

KA8408

## Teaching Guide & Worksheet

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#### HOW TO USE THE VIDEO AND TEACHING GUIDE

1. The "STOP TO THINK" signal means pause to think.
2. The "STOP TO WORK" signal means work the problem(s).
3. Rewind the tape and watch the lesson again if the concept is not clear.
4. Use "Learning Strategies" section of the Teachers Guide as memory aids and topics for classroom discussion.
5. Students should complete the exercises on the worksheet to confirm their understanding of this lesson.

Instructors may duplicate the worksheets as needed

### THE RECIPROCAL

- A. Discovering the reciprocal through the use of examples
- $5 \times ? = 1$
  - $17 \times ? = 1$
  - $1/2 \times ? = 1$
  - $3/5 \times ? = 1$
- B. A number multiplied by its reciprocal is 1
- C. The reciprocal of a fraction is obtained by exchanging the numerator and the denominator
- D. Zero has no reciprocal because  $1/0$  is undefined
- 

### DIVIDING FRACTIONS

- A. Through discovery, we find that to divide by a fraction you should multiply by its reciprocal
- $8/1 \div 2/1 = 4$
  - $8/1 \times 1/2 = 4$
  - $12/1 \div 3/1 = 4$
  - $12/1 \times 1/3 = 4$
  - $15/1 \div 3/1 = 5$
  - $15/1 \times 1/3 = 5$
- B. The fact that division is the opposite of multiplication helps explain why the rule for dividing by a fraction works
- 

### DIVIDING MIXED NUMBERS

- A. Change the mixed numbers to improper fractions
- $5\frac{1}{7} \div 2\frac{2}{3}$
  - $36/7 \div 8/3$
- B. Multiply the first fraction by the reciprocal of the divisor
- $36/7 \times 3/8$
  - $9/7 \times 3/2$
- C. Continue the process as a multiplication problem
- $27/14$
  - $27/14 = 1\frac{13}{14}$
- D. Check that the answer is reasonable
- $6 \div 3 = 2$
  - $1\frac{13}{14}$  is close to 2
- E. Note that dividing a bigger number by a smaller number yields an answer greater than 1
- F. Examine the process for dividing a mixed number by a fraction
- G. Note that dividing a smaller number by a larger number yields an answer less than 1
- 

### A REVIEW OF FRACTIONS

- A. Adding
- B. Subtracting
- C. Multiplying
- D. Dividing

1. What is the reciprocal of  $4\frac{3}{5}$     9.  $4\frac{1}{2}$

Solve the following:

2.  $\frac{7}{8} \div 1\frac{1}{2}$     10.  $5\frac{7}{8}$

3.  $7 \div \frac{5}{6}$     11.  $8\frac{3}{5}$

4.  $4\frac{1}{6} \div 3\frac{1}{3}$     12.  $9\frac{1}{9}$

5.  $5\frac{5}{8} \div 12\frac{1}{2}$     13.  $6\frac{3}{4}$

Find the reciprocal of:

14.  $4\frac{17}{20}$

6. 7

15.  $\frac{143}{11}$

7.  $\frac{3}{8}$

8.  $\frac{2}{9}$