ANSWERS

1. 21
2. 77
3. $\frac{5}{6}$
4. $5\frac{1}{3}$
5. $22\frac{3}{4}$
6. 48
7. 15
8. 125
9. $18\frac{1}{2}$
10. $4\frac{9}{10}$
11. $5\frac{2}{3}$
12. $\frac{43}{9}$
13. $\frac{85}{9}$
14. $\frac{59}{8}$
15. $\frac{58}{5}$
16. $\frac{125}{7}$

BASIC MATH

The Complete Course

Lesson Four

Introduction To Fractions

KA8404

Teaching Guide & Worksheet

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.

LEARNING STRATEGIES

WHAT IS A FRACTION?

A. A fraction is a part of a whole
B. A fraction is a ratio of two numbers
C. A fraction is an incomplete division problem
D. Looking at a graphic representation of a fraction
   1. A pizza cut into three slices
   2. One slice is eaten
   3. The remaining slices represent 2/3 of the pizza
E. The parts of a fraction
   1. The numerator—the "digit"
   2. The denominator—the "place value"

EQUIVALENT FRACTIONS

A. A concrete example of equivalent fractions—pizza slices
   1. A pizza is cut into three slices
   2. Each slice is cut into four smaller slices
   3. There are now twelve slices
   4. Eating two slices of the original pizza (2/3) is equivalent to eating eight slices of the "new" pizza (8/12)
   5. 2/3 and 8/12 are equivalent
B. Multiplying the top and the bottom of a fraction by the same number is equivalent to multiplying by 1—this does not change the VALUE of the fraction
C. Finding the missing part of an equivalent fraction
D. Dividing the top and bottom of a fraction by the same number is equivalent to dividing by 1; this does not change the VALUE of the fraction

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REDUCING FRACTIONS

A. The divisibility rules
   1. The rule for 3: the sum of the digits is a multiple of 3
   2. The rule for 5: the number ends in 5 or 0
   3. The rule for 2: it must be an even number
B. Why we reduce fractions
   1. Easier to understand
   2. 1/2 versus 49/98
   3. People have difficulty with large numbers

SIMPLIFYING FRACTIONS

A. Why an improper fraction needs to be simplified
   1. The concept of fraction as part of a whole
   2. Part of a whole is a proper fraction
B. Changing the improper fraction to a mixed number (a whole number and a fraction)
   1. The visualization of 25/6
   2. Seeing 25/6 as a mixed number
C. The simplifying process—completing the division problem
   1. Divide the numerator by the denominator
   2. The quotient is the whole-number part of the mixed number
   3. The remainder is the numerator of the fraction in the mixed number
   4. The denominator stays the same

CHANGING A MIXED NUMBER TO AN IMPROPER FRACTION

A. This is the reverse of the simplification process
B. It is analogous to checking a division problem
C. Why do we do this; this process will be used in multiplying and dividing fractions.

WORKSHEET STRATEGIES

Solve the following.

1. $\frac{7}{8} = \frac{?}{24}$

2. $\frac{6}{11} = \frac{42}{?}$

Write in simplest terms:

3. $\frac{75}{90}$

4. $\frac{64}{12}$

5. $\frac{91}{4}$

6. $\frac{4}{9} = \frac{?}{108}$

7. $\frac{12}{?} = \frac{48}{60}$

8. $\frac{17}{25} = \frac{85}{?}$

9. Simplify $\frac{37}{2}$

10. Simplify $\frac{49}{10}$

11. Simplify $\frac{85}{15}$

For Problems 12-16, write as an improper fraction.

12. $4\frac{7}{9}$

13. $9\frac{4}{9}$

14. $7\frac{3}{8}$

15. $11\frac{3}{5}$

16. $17\frac{6}{7}$