

10.	6	9.	1
8.	546	7.	12
6.	35	5.	3.384
15.	13000	4.	250
14.	75%	3.	850
13.	20	2.	45
12.	.68	1.	104
11.	450		

BASIC MATH

The Complete Course Lesson Fourteen

Ratios & Proportions

KA8414

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

RATIO: THE RELATIONSHIP BETWEEN TWO NUMBERS

- A. Ratios and fractions
 - B. Working with ratios
 1. Equivalent ratios
 2. Reducing ratios
 - C. Comparing ratios—use a common "denominator"
 1. Compare 4:6 and 5:8
 2. The common "denominator" is 24
 3. $4:6 = 16:24$
 4. $5:8 = 15:24$
-

PROPORTIONS

- A. A proportion is two ratios that are equal
 - B. Solving proportions
 1. Write the ratios in the proportion as fractions
 2. Use equivalent fractions to solve the proportion
 3. Reduce fractions in a proportion to make the solution easier
 4. Use a common numerator or common denominator to solve a proportion
 5. Why cross-multiplying works: the numerators of the ratios in a proportion are equal if the denominators are equal
-

PERCENTAGE PROBLEMS

- A. Using proportions as an alternate method of solving percent problems
 1. Set up the proportion using the ratio of "is" to "of" equal to the ratio of the percent to 100
 2. Solve the proportion
- B. Solving Type I problems
 1. 25% of 32 is ___
 2. $?/32 = 25/100$
 3. $? = 8$
- C. Solving Type II problems
 1. ___% of 90 is 15
 2. $15/90 = ?/100$
 3. $1/6 = ?/100$
 4. $6 \times ? = 100$
 5. $? = 100/6 = 16 \frac{2}{3}\%$
- D. Solving Type III problems
 1. 30% of ___ is 42
 2. $42/? = 30/100$
 3. $42/? = 3/10$
 4. $3 \times ? = 420$
 5. $? = 140$
- E. A visual method for setting up percent problems

Solve each proportion.

Find the missing number, "?".

1. $8 : 25 = ? : 325$
2. $\frac{17}{9} = \frac{85}{?}$
3. $\frac{17}{9} = \frac{?}{450}$
4. 45% of what is 112.5?
5. What is 42.3% of 8?
6. $14:30 = ? : 75$
7. $9 : ? = 42 : 56$
8. $\frac{7}{39} = \frac{98}{?}$
9. $\frac{16}{?} = \frac{1024}{64}$
10. $\frac{?}{27} = \frac{36}{162}$
11. $\frac{90}{13} = \frac{?}{65}$
12. 17% of 4 is _____
13. 2.5% of 800 is _____
14. What % of 56 is 42?
15. .3% of what is 39?