ANSWERS

1. 20.608
2. .196
3. 97
4. 1.276 → 1.28
5. 38.42 → 38.4
6. 4.6
7. 34.6528
8. 4.5
9. .4
10. .003
11. .2607 → .261
12. 5.2 → 5
13. 1.71 → 1.7
14. 1.5714 → 1.571
15. 2.425

BASIC MATH

The Complete Course

Lesson Ten

Multiplying & Dividing Decimals

KA8410

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

MULTIPLICATION OF DECIMAL NUMBERS

A. What is the last place value in the answer?
   1. 7.92 x 5.3 ends in 6
   2. 2 is in the 100ths place, 3 is in the 10ths place
   3. Hundredths times tenths is thousandths
   4. The 6 is in the thousandths place
B. Relating multiplication of decimals to multiplication of whole numbers
C. Multiplying "digit times digit" and "place value times place value" is the rule for decimals too
D. Associating place value with the number of zeros in the denominator of the place value
   1. 7.92
   2. The 2 is in the hundredths place
   3. The hundredths place is two places to the right of the decimal point
   4. 100 has two zeros
   5. 5.3
   6. The 3 is in the tenths place
   7. The tenths place is one place to the right of the decimal point
   8. 10 has one zero
   9. The number of zeros in the denominator is equal to the number of places that place value is from the decimal point
E. Locating the decimal point in the answer
F. Check that the answer is reasonable
   1. 37.4 x 9.6
   2. 37 x 10 = 370
   3. The answer should be approximately 370
   4. 359.04 is reasonable
G. Multiplying a number by a fraction produces a product that is smaller than the original number—use this to check the reasonableness of the answer when multiplying by a decimal fraction

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DIVISION OF DECIMAL NUMBERS

A. Converting the divisor to a whole number
B. We do this because division is the opposite of multiplication
C. The division algorithm
   1. Move the decimal point to the back of the divisor
   2. Move the decimal point in the dividend the same number of places to the right
   3. Fill in any missing places with zeros
   4. Divide as with whole numbers
   5. Check the answer
D. What to do with a remainder?

DIVISION WITH ROUNDING OFF

A. Why round off?
   1. Level of precision
   2. Dollars and cents
B. The rounding algorithm
   1. Work the division problem until you are one place to the right of where the answer is to be rounded off (the "last place")
   2. If the digit in that place is five or greater, add one to the digit in the "last place"
   3. If the digit is less than five, make no change to the digit in the "last place"
C. The usefulness of rounding off
   1. Rounding to the hundredths place with dollars and cents
   2. Rounding to the thousandths place in the calculation of batting averages

WORKSHEET STRATEGIES

Do all work by hand and check with a calculator.

1. 7.36 x 2.8 = _____

2. .56 x .35 = _____

3. $.03\overline{)2.91}$

4. $4.7\overline{)6}$

round off to 100ths

5. $.19\overline{)7.3}$

round off to 10ths

6. _____ x 3.7 = 17.02

7. _____ ÷ 2.8 = 12.376

8. _____ ÷ .25 = 18

9. 3.6 ÷ _____ = 9

10. 2.07 ÷ _____ = 690

11. $2.8\overline{).73}$

round to 1000ths

12. $.57\overline{)3}$

round to ones

13. 4.63 ÷ 2.7 = _____

round to 10ths

14. 11 ÷ 7 = _____

round to 1000ths

15. .97 ÷ 4 = _____