Difficulty with Decimals? Self-Help Guide!

Multiplying Decimals

Multiplication does **not** require "like terms." It is **not** necessary to line up the decimal points. For example, multiplying tenths by tenths will produce hundredths as shown below:

$$(0.1)(0.1) = \frac{1}{10} \bullet \frac{1}{10} = \frac{1}{100} = 0.01$$

The number of digits to the right of the decimal point in the answer (2 digits in the above example) is equal to the number of digits to the right of the decimal point in the numbers multiplied (1 digit in each factor for a total of 2 digits). When multiplying decimals, move the decimal point by counting the number of digits to the right of the decimal point in the numbers multiplied.

Verify the process by considering money (in dollars) which is represented as a decimal to the hundredth place. What is the value of three quarters; in other words, what is \$0.25 × 3? There is no question that this equals \$0.75.

Example #9: (0.25)(3)

Multiply the numbers:

$$\begin{array}{r} 0.25 \\ \times \quad 3 \\ \hline 0.75 \end{array}$$

(It is **not** necessary to line up the decimal points.)

Move the decimal point:

(There should be 2 digits to the right of the decimal point in the answer.)

Example #10: (0.5)(0.2)

Multiply the numbers:

$$\begin{array}{r} 0.5 \\ \times \ 0.2 \\ \hline 0.10 \end{array}$$

Move the decimal point:
(adding zeros, if necessary)

(There should be 2 digits to the right of the decimal point in the answer.)

[Note: 0.10 = 0.1]

Example #11: (0.34)(0.2)

Multiply the numbers:

$$\begin{array}{r} 0.34 \\ \times \quad 0.2 \\ \hline 0.068 \end{array}$$

(It is **not** necessary to line up the decimal points.)

Move the decimal point:
(adding zeros, if necessary)

(There should be 3 digits to the right of the decimal point in the answer.)

To multiply repeating decimals, convert the repeating decimals to fractions (see Example 2).