Chapter 1 Review

Multiplying Decimals by Whole Numbers and Decimals
1) Estimate.
2) Place the longer number on the top.
3) Right justify (line up) the numbers. You do NOT have to line up the decimals in multiplication.
4) Multiply like there are no decimals.
5) Count the numbers behind the decimal places in ALL the factors.
6) Place the decimal in your product (or answer) starting from the right.

Example: 0.15 x 0.253

$$\begin{array}{r} 0.253 \\ \underline{x0.15} \\ 1265 \\ \underline{+2530} \\ 3795 \end{array}$$

0.03795

Five numbers behind the decimal in the factors, so there should be five numbers behind the decimal in the product.

Dividing Decimals by Whole Numbers and Decimals
1) Estimate.
2) Change the divisor into a whole number.
3) Move the decimal of the dividend the same number of times.
4) Pop up your decimal point above the new location.
5) Divide like normal, keeping everything lined up.

Example:

83.2 ÷ 12.8

12.8 | 83.2

$$\begin{array}{r} 6.5 \\ 128 \overline{\smash{)}832.0} \\ \underline{-768} \\ 640 \\ \underline{-640} \\ 0 \end{array}$$

**Remember, the first number in this division expression is the dividend, it goes "in the box." The second number is the divisor.

Multiplying & Dividing by Powers of 10
When multiplying by a power of ten that is greater than one (10, 100, 1,000, etc.)
1) Count the zeroes in the power of ten.
2) Move decimal to the **right** that many places.

Example: 1.678 x 100
Count the zeroes. There are two zeroes in 100
Move the decimal in 1.678 two places to the right.
1.678 x 100 = 167.8

When multiplying by a power of ten that is less than one (0.1, 0.01, 0.001, etc.)
1) Count the **numbers** behind the decimal in the power of 10
2) Move the decimal to the **left** that many places.

Example: 1.678 x 0.0001
Count the **numbers** behind the decimal. There are four numbers behind the decimal in 0.0001.
Move the decimal in 1.678 four places to the left.
1.678 x 0.0001 = 0.0001678

When dividing by a power of 10 that is greater than one (10, 100, 1,000, etc.)
1) Count the zeroes in the power of ten.
2) Move the decimal to the **left** that many places.

Example: 25.73 ÷ 1,000
Count the zeroes. There are three zeroes in 1,000.
Move the decimal in 25.73 to the left three places.
25.73 ÷ 1,000 = 0.02573

When dividing by a power of 10 that is less than one (0.1, 0.01, 0.001, etc.)
1) Count the **numbers** behind the decimal in the power of ten.
2) Move the decimal to the **right** that many places.

Example: 25.73 ÷ 0.01
Count the numbers behind the decimal. There are two numbers behind the decimal in 0.01.
Move the decimal in 25.73 to the right two places.
25.73 ÷ 0.01 = 2,573