

## Multiplying Decimal Numbers; Exponents with Decimal Bases

**Ex 1.**

$$2.04 \cdot 0.09$$

$$(-1.5)(2.91)$$

$$(-0.05)^3$$

$$(1.7x^3)(6.2x^2)$$

**Ex 2.**

If you buy 4.5 pounds of oatmeal at \$0.69 per pound, what is the total cost?

\_\_\_\_\_ means the price of each unit.

Note that  $2.3 \cdot 10 = 23$ , and  $2.3 \cdot 100 = 230$ , and  $2.3 \cdot 1000 = 2300$ .

Multiplying by a positive power of 10 (ex:  $10^2, 10^3, 10^4$ , etc.) moves the decimal place to the right.

\_\_\_\_\_ is a convenient way to write really big or really small numbers as a decimal number between 1 and 10 multiplied by a power of 10.

So, there are two parts:

1. A decimal number whose absolute value is *between 1 and 10* (including 1 but not 10).
2. 10 raised to an integer exponent.

ex:  $3.27 \times 10^3$  is in scientific notation

$$3.27 \times 10^3 = 3.27 \times 10 \times 10 \times 10 = 3270$$

ex: Is  $24.6 \times 10^4$  in scientific notation?

ex: Is  $-1.1 \times 10^5$  in scientific notation?

**Ex 3.**

Write the number in standard form, then write its word name.

$$7.81 \times 10^9$$

$$-1.5 \times 10^{13}$$

**Ex 4.**

Write each number in scientific notation.

91,000

108,300,000