

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Notes

Algebra Section 8.4

Pages 512-518

**Goal:** “You will read and write numbers in scientific notation”



**Vocabulary:**

**Scientific Notation:** A number written in the form \_\_\_\_\_ where \_\_\_\_\_ and

$n$  is an \_\_\_\_\_.

**Notes:**

If the exponent is positive it tells you that \_\_\_\_\_

If the exponent is negative it tells you that \_\_\_\_\_

Number	Standard Form	Scientific Notation
Two million	2,000,000	$2 \times 10^6$
Five thousandths	0.005	$5 \times 10^{-3}$

**Write the following numbers in scientific notation:**

**Ex:** 42,590,000 = \_\_\_\_\_  $\times 10^7$

**Ex:** 0.0000574 = \_\_\_\_\_  $\times 10^?$

**Ex:** 539,000 = \_\_\_\_\_

**Ex:** 267,500,000 = \_\_\_\_\_

**Ex:** 0.000486 = \_\_\_\_\_

**Write the following numbers in standard form:**

**Ex:**  $2.0075 \times 10^6 =$  \_\_\_\_\_

**Ex:**  $1.685 \times 10^{-4} =$  \_\_\_\_\_

**Ex:**  $7.0235 \times 10^5 =$  \_\_\_\_\_

**Ex:**  $3.096 \times 10^{-7} =$  \_\_\_\_\_

**Ex:**  $4.5 \times 10^{-4} =$  \_\_\_\_\_

**Order numbers in scientific notation:**

**Ex:** Order 103,400,000;  $7.8 \times 10^8$ ; 80,760,000 from least to greatest.

**Ex:** Order 93,000,000;  $9.2 \times 10^6$ ; 9,028,000 from least to greatest.

**Multiply or divide numbers in scientific notation:**

**Ex:**  $(8.5 \times 10^2)(1.7 \times 10^6)$

**Ex:**  $(1.5 \times 10^{-3})^2$

**Ex:**  $(5.7 \times 10^3)(2.6 \times 10^4)$

**Ex:**  $(2.4 \times 10^{-4})^2$

**Ex:**  $(1.3 \times 10^{-5})^2$

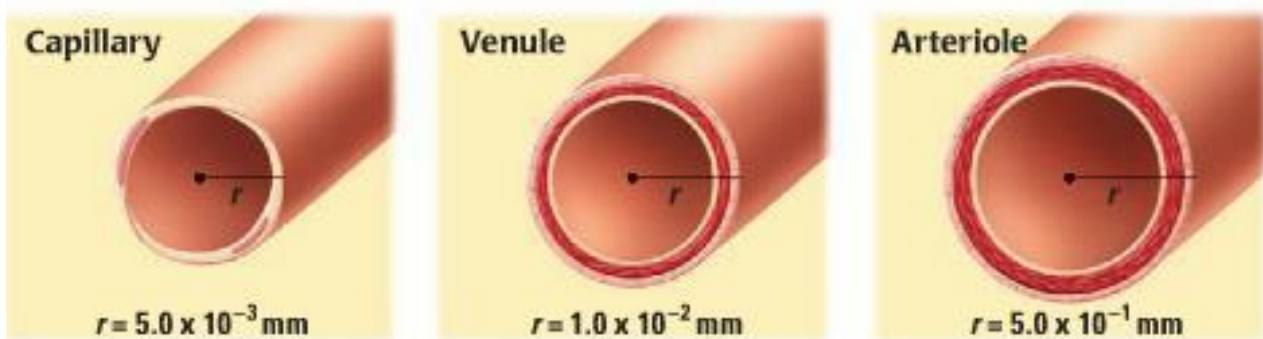
**Ex:**  $(1.1 \times 10^7)(4.2 \times 10^2)$

**Ex:**  $\frac{1.2 \times 10^4}{1.6 \times 10^{-3}}$

**Ex:**  $\frac{4.5 \times 10^5}{1.5 \times 10^{-2}}$

**Ex:**  $\frac{2.4 \times 10^5}{2.5 \times 10^{-4}}$

**Ex:** Blood flow is partially controlled by the cross-sectional area of the blood vessel through which the blood is traveling. Three types of blood vessels are venules, capillaries and arterioles.



a) Let  $r_1$  be the radius of a venule, and let  $r_2$  be the radius of a capillary. Find the ratio of  $r_1$  to  $r_2$ . What does the ratio tell you?

b) Let  $A_1$  be the cross-sectional area of a venule and  $A_2$  be the cross-sectional area of a capillary. Find the ratio of  $A_1$  to  $A_2$ . What does the ratio tell you?