

8.4: Use Scientific Notation

Goals: *Read and Write numbers in scientific notation

*Order numbers written in scientific notation

*Multiply and Divide numbers written in scientific notation

Standard Notation:

Scientific Notation:

If the power of ten is positive, it tells you:

If the power of ten is negative, it tells you:

Write the following numbers in scientific notation:

Ex: 42,590,000 = _____ $\times 10^?$

Ex: 0.0000574 = _____ $\times 10^?$

Ex: 539,000 = _____

Ex: 267,500,000 = _____

Ex: 0.000486 = _____

Write the following numbers in standard notation:

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; 7.8×10^8 ; 80,760,000 from least to greatest.

Ex: Order 93,000,000; 9.2×10^6 ; 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: $(1.3 \times 10^{-5})^2$

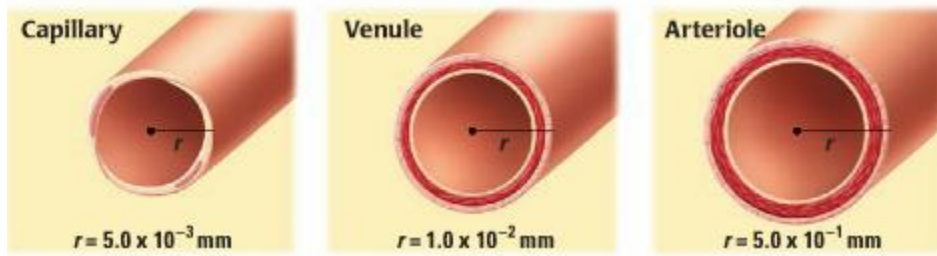
Ex: $(1.1 \times 10^7)(4.2 \times 10^2)$

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?