Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
~REVIEW~ SCIENTIFIC NOTATION	**Directions:** Write each number in **standard form**: **1.** 2.95×10^{4} **2.** 5.8×10^{7} **3.** 3.4×10^{-2} **4.** 1.62×10^{-5} **Directions:** Write each number in **scientific notation**: **5.** 974,000 **6.** 7,200 **7.** 0.0000000016 **8.** 0.00259 **Directions:** Write each number in correct **scientific notation form**: **9.** 821×10^{3} **10.** $4,521.3 \times 10^{-5}$ **11.** 0.67×10^{4} **12.** 0.00023×10^{-1} ⬆ When moving the decimal, remember the phrase "LARS": ⬆ _____ _____, _____ _____! If you move the decimal **LEFT**, _____ to the exponent. If you move the decimal **RIGHT**, _____ from the exponent.
MULTIPLYING & DIVIDING NUMBERS in SCI. NOTATION	① Multply or divide the numbers. ② If **multiplying**, use **the product rule** with the exponents. If **dividing**, use the **quotient rule** with the exponents. ③ Use LARS to adjust the decimal if needed to ensure it's in correct scientific notation form.
EXAMPLES	**13.** $(4 \times 10^{3})(6 \times 10^{4})$ **14.** $(9.8 \times 10^{4})(7.5 \times 10^{-3})$

	15. $(9.5 \times 10^{-2})(1.4 \times 10^{-3})$	**16.** $(6.2 \times 10^{-4})(7.8 \times 10^{-3})$
	17. $(3 \times 10^{7}) \div (4 \times 10^{5})$	**18.** $(5.2 \times 10^{-4}) \div (8 \times 10^{-7})$
	19. $\dfrac{9 \times 10^{-6}}{1.2 \times 10^{2}}$	**20.** $\dfrac{6.4 \times 10^{9}}{2.5 \times 10^{-3}}$
	21. Find the product of 7.2×10^{8} and 5.1×10^{-6}.	**22.** Find the quotient of 2.9×10^{-2} and 4×10^{-9}.
APPLICATIONS	**23.** The mass of Earth is is 5.97×10^{24} kilograms while the mass of Jupiter is 1.9×10^{27} kilograms. Approximately how many times greater is the mass of Jupiter compared to Earth? Give your answer in scientific notation.	
	24. Los Angeles uses approximately 4.9×10^{8} gallons of water per day. About how many gallons of water does the city use in a year? Give your answer in scientific notation.	
	25. Student loan debt in the United States grows approximately 9.8×10^{3} dollars every hour. At this rate, how much debt accures each week? Give your answer in scientific notation.	

Name: _____

Date: _____ **Per:** _____

Directions: Evaluate each expression. Give all final answers in scientific notation.

1. $(9 \times 10^2)(3 \times 10^6)$	**2.** $(1.2 \times 10^{-1})(7 \times 10^4)$	**3.** $(6.8 \times 10^8)(7.4 \times 10^{-10})$
4. $(8 \times 10^{-6})(9 \times 10^{-4})$	**5.** $(5 \times 10^8) \div (8 \times 10^1)$	**6.** $(6 \times 10^2) \div (2.4 \times 10^{-1})$
7. $(1.8 \times 10^{-10}) \div (6 \times 10^{-2})$	**8.** $\dfrac{1.2 \times 10^3}{5 \times 10^9}$	**9.** $\dfrac{4.5 \times 10^{-8}}{7.5 \times 10^3}$

10. Find the quotient of 1×10^{-2} and 8×10^{-5}.	**11.** Find the product of 8.8×10^{-11} and 5.2×10^{-2}.
12. Fill in the missing exponent. $(7.1 \times 10^{\square})(9 \times 10^7) = 6.39 \times 10^5$	**13.** Fill in the missing exponent. $(3 \times 10^{-2}) \div (8 \times 10^{\square}) = 3.75 \times 10^{-9}$

14. The human heart beats approximately 1.152×10^5 times per day. Approximately how many times does the heart beat per year?

15. The average depth of the Arctic Ocean is 3.953×10^3 feet while the average depth of the Atlantic Ocean is 1.2851×10^4 feet. Approximately how many times more deep is the Atlantic Ocean than the Arctic Ocean?

16. The diameter of Virus A is 2.6×10^{-7} millimeters. If a new virus, Virus B, has a diameter that is 15 times larger than Virus A, find the diameter of Virus B.