Practice Worksheet #2: Sections 10.5–10.7

Reading, Writing, and Operating with Scientific Notation

Directions: Show all work. For Section D, write each final answer in **scientific notation**.

A. Tell whether the number is written in scientific notation. Explain. (Section 10.5)

1. 4.2×10^{9}

2. 0.58×10^{3}

3. 9.87×10^{-2}

4. 15.6×10^{4}

B. Write the number in standard form. (Section 10.5)

5. 7.25×10^{6}

6. 4.01×10^{-3}

7. 2.9×10^{1}

8. 6.84×10^{-5}

C. Write the number in scientific notation. (Section 10.6)

9. 0.00000672

10. 81,400,000

11. 0.0935

12. 6,020,000

D. Evaluate the expression. Write your answer in scientific notation. (Section 10.7)

13. $(4.8 \times 10^4) + (3.6 \times 10^4)$

14. $(6.2 \times 10^{-5}) - (1.9 \times 10^{-6})$

15. $(7.5 \times 10^2) \times (4.0 \times 10^{-3})$

16. $(9.6 \times 10^{-6}) \div (1.2 \times 10^{-9})$

17. $(3.4 \times 10^8) + (6.5 \times 10^7)$

18. $(8.1 \times 10^{-2}) - (2.7 \times 10^{-3})$

E. Applications (Sections 10.5–10.7)

1. PLANETS. The table shows approximate equatorial radii of several planets.

Planet	**Equatorial Radius (km)**
Mercury	2.44×10^3
Venus	6.05×10^3
Earth	6.38×10^3
Mars	3.40×10^3
Jupiter	7.15×10^4
Saturn	6.03×10^4

a. Which planet has the **smallest** equatorial radius? Explain.

b. Which planet has the **largest** equatorial radius? Explain.

2. DISTANCE. A satellite is 7×10^6 kilometers from Earth. If 1 kilometer $= 10^3$ meters, how far is the satellite from Earth in meters? Write your answer in scientific notation.

3. BIOLOGY. A cell membrane is 0.00000091 meters thick. Write this number in scientific notation.

4. ORBITS. The Sun takes about 2.4×10^8 years to orbit the Milky Way. A planet takes 1.5×10^1 years to orbit its star. How many times does the planet orbit while the Sun completes one orbit? Write your answer in standard form.