Practice Worksheet: Sections 10.5–10.7

10.5 Reading Scientific Notation 10.6 Writing Scientific Notation 10.7 Operations in Scientific Notation

Directions: Show your work in the space provided. 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. 18×10^4

2. 0.93×10^{-6}

3. 7.01×10^0

4. 12.4×10^{-3}

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

5. 3.6×10^7

6. 5.08×10^{-4}

7. 9.12×10^{2}

8. 1.47×10^{-1}

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

9. 0.0000835

10. 46,300,000

11. 0.01209

12. 905,000

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

13. $(6.45 \times 10^5) + (2.8 \times 10^5)$

14. $(3.2 \times 10^{-6}) - (7.5 \times 10^{-7})$

15. $(4.6 \times 10^3) \times (1.9 \times 10^{-2})$

16. $(7.2 \times 10^{-4}) \div (9.0 \times 10^{-8})$

17. $(9.1 \times 10^7) + (3.7 \times 10^6)$

18. $(5.04 \times 10^{-3}) - (1.8 \times 10^{-4})$

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	6.37×10^3
Mars	3.39×10^3
Jupiter	7.15×10^4
Saturn	6.03×10^4

a. Which planet has the **second-smallest** equatorial radius? Explain how you know.

b. Which planet has the **second-largest** equatorial radius? Explain how you know.

2. SPACE DISTANCE. A spacecraft is about 4×10^5 kilometers from Earth. If 1 kilometer is 10^3 meters, how far is the spacecraft from Earth in meters? Write your answer in scientific notation.

3. SKIN THICKNESS. A layer of skin is about 0.00042 meters thick. Write this number in scientific notation.

4. ORBITS. The Sun takes about 2.25×10^8 years to orbit the center of the Milky Way. A dwarf planet takes about 3.0×10^2 years to orbit the Sun. How many times does the dwarf planet orbit the Sun while the Sun completes one orbit around the Milky Way? Write your answer in standard form.