

**7-4 STUDY GUIDE
ANSWERS TO EXERCISES**

Set A

Express each number in scientific notation.

1. 5,100,000
 5.1×10^6

2. 80,300,000,000
 8.03×10^{10}

3. 14,250,000
 1.425×10^7

4. 68,070,000,000,000
 6.807×10^{13}

5. 14,000
 1.4×10^4

6. 901,050,000,000
 9.0105×10^{11}

7. 0.0049
 4.9×10^{-3}

8. 0.000301
 3.01×10^{-4}

9. 0.0000000519
 5.19×10^{-8}

10. 0.000000185
 1.85×10^{-7}

11. 0.002002
 2.002×10^{-3}

12. 0.00000771
 7.71×10^{-6}

Express each number in standard form.

13. 4.91×10^4
49,100

14. 3.2×10^{-5}
0.000032

15. 6.03×10^8
603,000,000

16. 2.001×10^{-6}
0.000002001

17. 1.00024×10^{10}
10,002,400,000

18. 5×10^5
500,000

19. 9.09×10^{-5}
0.0000909

20. 3.5×10^{-2}
0.035

21. 1.7087×10^7
17,087,000

Set B

Evaluate each product. Express the results in both scientific notation and standard form.

1. $(3.4 \times 10^3)(5 \times 10^4)$
 1.7×10^8 ; 170,000,000

2. $(2.8 \times 10^{-4})(1.9 \times 10^7)$
 5.32×10^3 ; 5320

3. $(6.7 \times 10^{-7})(3 \times 10^3)$
 2.01×10^{-3} ; 0.00201

4. $(8.1 \times 10^5)(2.3 \times 10^{-3})$
 1.863×10^3 ; 1863

5. $(1.2 \times 10^{-4})^2$
 1.44×10^{-8} ; 0.000000144

6. $(5.9 \times 10^5)^2$
 3.481×10^{11} ; 348,100,000,000

Evaluate each quotient. Express the results in both scientific notation and standard form.

7. $\frac{4.9 \times 10^{-3}}{2.5 \times 10^{-4}}$
 1.96×10^1 ; 19.6

8. $\frac{5.8 \times 10^4}{5 \times 10^{-2}}$
 1.16×10^6 ; 1,160,000

9. $\frac{1.6 \times 10^5}{4 \times 10^{-4}}$
 4.0×10^8 ; 400,000,000

10. $\frac{8.6 \times 10^6}{1.6 \times 10^{-3}}$
 5.375×10^9 ; 5,375,000,000

11. $\frac{4.2 \times 10^{-2}}{6 \times 10^{-7}}$
 7×10^4 ; 70,000

12. $\frac{8.1 \times 10^5}{2.7 \times 10^4}$
 3×10^1 ; 30