

Prep for Basic Chemistry: Competency 1 Practice Key

Rewrite these numbers in power-of-ten form:

(HINT: Use **SCI** mode.)

1. $0.000007 = \underline{7 \times 10^{-6}}$
2. $0.00008 = \underline{8 \times 10^{-5}}$
3. $500,000 = \underline{5 \times 10^5}$
4. $8,000,000 = \underline{8 \times 10^6}$
5. $0.000508 = \underline{5.08 \times 10^{-4}}$
6. $15,000 = \underline{1.5 \times 10^4}$
7. $6,760,000,000 = \underline{6.76 \times 10^9}$
8. $70,000,000,000 = \underline{7 \times 10^{10}}$
9. $0.00000000788 = \underline{7.88 \times 10^{-9}}$
10. $0.00000000046 = \underline{4.6 \times 10^{-10}}$

Multiply or divide, then write each product or quotient in correct power-of-ten form:

11. $(6.5 \times 10^6)(6 \times 10^{-4}) = \underline{3.9 \times 10^3}$
12. $(1.5 \times 10^5)(6 \times 10^{-6}) = \underline{9 \times 10^{-1}}$
13. $(2.7 \times 10^7)(7.7 \times 10^6) = \underline{2.079 \times 10^{14}}$
14. $(4.3 \times 10^{-5})(9 \times 10^{-7}) = \underline{3.87 \times 10^{-11}}$
15. $(3 \times 10^8)(7 \times 10^{-5}) = \underline{2.1 \times 10^4}$
16. $\frac{8 \times 10^{-8}}{8 \times 10^{-5}} = \underline{1 \times 10^{-3}}$

$$17. \frac{1.1 \times 10^{-7}}{2 \times 10^8} = \underline{5.5 \times 10^{-16}}$$

$$18. \frac{9.6 \times 10^{-6}}{6 \times 10^3} = \underline{1.6 \times 10^{-9}}$$

$$19. \frac{9.7 \times 10^6}{5 \times 10^7} = \underline{1.94 \times 10^{-1}}$$

$$20. \frac{9.7 \times 10^{-5}}{2 \times 10^6} = \underline{4.85 \times 10^{-11}}$$

Use a calculator to find the logarithms of these numbers to 3 decimal places:

(Make sure you are not in **SCI** mode, but in **FLO** mode.)

$$21. \quad 4.38 \quad \underline{0.641}$$

$$22. \quad 0.85 \quad \underline{-0.071}$$

$$23. \quad 2.2031 \quad \underline{0.343}$$

$$24. \quad 651 \quad \underline{2.814}$$

$$25. \quad 0.0794 \quad \underline{-1.100}$$