Name: Date:
Instructor: Section:

Practice Set 9.5

Use the choices to fill in each blank.

antilogarithm	real number	common	$10^L = N$
exponent	Richter scale	natural	$10^N = L$

1. Logarithms with a base 10 are called _____ logarithms.

2. The common logarithm of a positive number x is the ._____ to which the base 10 must be raised to obtain the number x.

3. The magnitude of an earthquake on the _____ is given by the formula $R = \log I$ where I is the number of times more intense the quake is than the smallest measurable activity.

4. $\log N = L$ in exponential form is written _____.

Use a calculator to approximate the following common logarithms. Round your answers to four decimal places.

5. $\log 54$ **6.** $\log 1700$ **5.**_____ **6.**_____

7. $\log 0.0157$ **8.** $\log 0.000543$ **7.**_____ **8.**_____

Find the following powers of 10. Round your answers to four decimal places.

9. $10^{0.3157}$ **10.** $10^{3.5378}$ **9.**_____ **10.**_____

11. $10^{-1.5789}$ **12.** $10^{-0.1359}$ **11.**_____ **12.**_____

Solve for x in each of the following equations. If necessary, round your answers to four decimal places.

13. $\log x = 3.0000$ **14.** $\log x = 1.5492$ **13.**_____ **14.**_____

15. $\log x = -2.139$ **16.** $\log x = -1.15$ **15.**_____ **16.**_____

Find the exponent to which 10 must be raised to obtain each of the following numbers. Round your answers to four decimal places.

17. 4571 **18.** 345,000 **17.**_____ **18.**_____

Change each logarithm to exponential form and evaluate without use of a calculator.

19. $\log 10{,}000$ **20.** $\log 0.01$ **19.**_____ **20.**_____

Use the common logarithm properties to evaluate the following.

21. $10^{\log 6}$ **22.** $\log 10^8$ **21.**_____ **22.**_____