Lesson 8.6 Practice: Logarithmic Scales and Models

School Launch · Algebra II · Unit 8: Logarithmic Functions · Worksheet A

Calculator for decimals

Name _____ Date _____ Score _____ / 10

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, write the equation, solve, and answer in a sentence with units.

1. An earthquake of magnitude 10 is how many times as intense (in amplitude) as one of magnitude 8? EASY

2. An earthquake of magnitude 9 is how many times as intense (in amplitude) as one of magnitude 8? EASY

3. An earthquake of magnitude 4 is how many times as intense (in amplitude) as one of magnitude 3? EASY

4. Find the pH of a solution with $[H^+] = \frac{7}{1000}$ (nearest hundredth). Use $\mathrm{pH} = -\log[H^+]$. MEDIUM

5. Find the pH of a solution with $[H^+] = \frac{3}{100000000}$ (nearest hundredth). Use $\mathrm{pH} = -\log[H^+]$. MEDIUM

6. Find the pH of a solution with $[H^+] = \frac{3}{10000000}$ (nearest hundredth). Use $\mathrm{pH} = -\log[H^+]$. MEDIUM

7. Find the pH of a solution with $[H^+] = \frac{1}{500000000}$ (nearest hundredth). Use $\mathrm{pH} = -\log[H^+]$. MEDIUM

8. Find the pH of a solution with $[H^+] = \frac{1}{20000000}$ (nearest hundredth). Use $\mathrm{pH} = -\log[H^+]$. HARD

9. Find the pH of a solution with $[H^+] = \frac{1}{2500}$ (nearest hundredth). Use $\mathrm{pH} = -\log[H^+]$. HARD

10. Find the pH of a solution with $[H^+] = \frac{1}{250000}$ (nearest hundredth). Use $\mathrm{pH} = -\log[H^+]$. HARD