NAME _____ DATE _____ PERIOD _____

Lesson 5 Homework Practice

Negative Exponents

Write each expression using a positive exponent.

1. 8^{-5} **2.** 3^{-9} **3.** z^{-2} **4.** p^{-4}

Evaluate each expression.

5. $(-6)^{-5}$ **6.** 8^{-4} **7.** 2^{-9} **8.** $(-7)^{-9}$

Write each fraction as an expression using a negative exponent.

9. $\frac{1}{2^9}$ **10.** $\frac{1}{64}$ **11.** $\frac{1}{e^5}$ **12.** $\frac{1}{7^4}$

Simplify. Express using positive exponents.

13. $\frac{6^5}{6^2}$ **14.** $n^{-2} \cdot n^{-3}$ **15.** $\frac{w^3}{w^{-1}}$ **16.** $\frac{k^{-4}}{k^{-6}}$

17. **ROADS** A state highway that is 4^4 miles long runs parallel to a smaller country road that is 4^2 miles long. How many times longer than the country road is the state highway? Write the answer as a number with a positive exponent.

18. FUNDRAISERS The hospital spent 9^5 dollars on new medical equipment this year. Last year, they spent 9^7 dollars. How many times more money did they spend last year than this year?

19. MEASUREMENT 1 milligram is equal to 10^{-3} grams. Write this number using a positive exponent.

20. DISTANCE A long-distance runner runs 2^5 miles one week and 2^7 miles the next week. How many times farther did he run in the second week than in the first week?