

## Lesson 5 Homework Practice

### Negative Exponents

Write each expression using a positive exponent.

1.  $8^{-6}$

2.  $3^{-9}$

3.  $z^{-2}$

4.  $p^{-4}$

Evaluate each expression.

5.  $(-6)^{-5}$

6.  $8^{-4}$

7.  $2^{-3}$

8.  $(-7)^{-3}$

Write each fraction as an expression using a negative exponent.

9.  $\frac{1}{2^9}$

10.  $\frac{1}{64}$

11.  $\frac{1}{e^4}$

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  $9^3$  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?