

Center 5 - 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?