

Name: _____

Date: _____

Lesson 1.5 Zero and Negative Exponents

Simplify each expression and evaluate.

1. $9^4 \cdot 9^0$

2. $11^3 \cdot (-11)^0$

3. $\left(\frac{6}{7}\right)^8 \cdot \left(\frac{6}{7}\right)^0$

4. $9^2 \cdot 10^3 + 5^3 \cdot 10^2 + 2^6 \cdot 10^0$

5. $4.7 \cdot 10^3 + 6 \cdot 10^2 + 7 \cdot 10^0$

6. $\frac{5^3 \cdot 5^7}{5^{10}}$

7. $(4^{-2})^0 \cdot 7^2$

8. $\frac{(8^{-4})^{-2} \cdot 7^8}{56^8}$

Simplify each expression. Write your answer using a negative exponent.

9. $6^{-8} \cdot 6^3$

10. $\frac{(-9)^{-4}}{(-9)^4}$

11. $\frac{5}{6} \div \left[\left(\frac{5}{6}\right)^7 \cdot \left(\frac{5}{6}\right)^0 \right]$

12. $\left(\frac{3}{8}\right)^{-5} \cdot \left(\frac{3}{8}\right)^{-2} \div \left(\frac{3}{8}\right)^{-1}$

13. $\frac{y^0}{y^4 \cdot y^3}$

14. $\frac{7p^{-6} \cdot 6p^{-3}}{3p^{-5}}$

Name: _____

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Simplify each expression. Write your answer using a positive exponent.

15. $4.1^{10} \div 3.6^5$

16. $9.6^{-4} \div 3.2^{-4}$

17. $\frac{(-6)^{-8}}{(-6)^3}$

18. $\left(\frac{4}{9}\right)^{-7} \cdot \left(\frac{4}{9}\right)^{-1} \div \left(\frac{4}{9}\right)^{-5}$

19. $\frac{5h^{-2} \cdot 7h^{-4}}{25h^{-9}}$

20. $\frac{b^{16} \cdot b^{-5}}{b^{-7}}$

Evaluate each numeric expression.

21. $\frac{4^{-3} \cdot 4^0}{9^4 \cdot 9^{-7}}$

22. $\frac{(5^{-2})^4 \cdot 16^{-8}}{40^{-8}}$

23. $\frac{6^0}{3^{-3} \cdot 2^{-3}}$

24. $\frac{(5^3)^{-4}}{10^{-8} \cdot (-2)^5}$

Simplify each algebraic expression.

25. $\left(\frac{8v^6}{-64w^0}\right)^{-1}$

26. $\frac{28x^4y^7}{4x^6y^{-1}}$