

Name: _____ Period: _____

Score:

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HW 4-5: Negative Exponents

Write each expression using a positive exponent.

1. 7^{-10}

4. w^{-13}

2. $(-5)^{-4}$

5. $\frac{1}{12^{-4}}$

3. g^{-7}

6. $\frac{1}{(-5)^{-7}}$

7. The table shows different metric measurements. Write each decimal as a power of 10.

Measurement	Value
Decimeter	0.1
Centimeter	0.01
Millimeter	0.001
Micrometer	0.000001

8. An atom is a small unit of matter. A small atom measures about 0.0000000001 meter. Write the decimal as a power of 10.

Simplify.

9. $2^{-3} \cdot 2^{-4}$

14. $\frac{a^{-4}}{a^{-6}}$

10. $s^{-5} \cdot s^{-2}$

15. $\frac{y^{-6}}{y^{-10}}$

11. $y^{-1} \cdot y^4$

16. $\frac{z^{-4}}{z^{-8}}$

12. $(3a)(a^{-3})$

13. $\frac{3^{-1}}{3^{-5}}$

17. The mass of a molecule of penicillin is 10^{-18} kilogram and the mass of a molecule of insulin is 10^{-23} kilogram. How many times greater is the mass of a molecule of penicillin than the mass of a molecule of insulin?

18. Without evaluating, order 11^{-3} , 11^2 , and 11^0 from least to greatest. Explain your reasoning.

19. Write an expression with a negative exponent that has a value between 0 and $\frac{1}{2}$.

Simplify.

20. $z^2 \cdot z^{-3}$

24. 2^{-4}

21. $n^{-1} \cdot n^3$

25. $(-5)^{-4}$

22. $\frac{b^{-7}}{b^5}$

26. $(-10)^{-4}$

23. $\frac{x^4}{x^{-2}}$

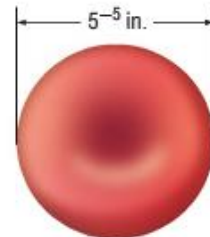
27. $(0.5)^{-4}$

Find the missing exponent.

28. $\frac{17^\bullet}{17^4} = 17^8$

31. A blood cell has a diameter of about 5^{-5} inches.

29. $\frac{k^6}{k^\bullet} = k^2$



30. $\frac{p^{-1}}{p^\bullet} = p^{10}$

Write 5^{-5} using positive exponents.

(A) 5^5

(C) $\frac{5^5}{1}$

(B) $\frac{1}{5^{-5}}$

(D) $\frac{1}{5^5}$