

NAME: _____ Laws of Exponents Quiz Review HW

Simplify. Your answer should contain only **positive** exponents.

1. $\frac{8n^9 \cdot 9n^6}{4n^{12}}$ $\frac{72n^{15}}{4n^{12}} = 18n^3$	2. $7xy^1 \cdot 6y^5$ $42xy^6$	3. $\frac{21s^9t^3}{3st}$ $7s^8t^2$
4. 182^0 1	5. $5m^{11} \cdot 7m^{-3}$ $35m^8$	6. $\frac{a^4}{a^7}$ $a^{-3} = \frac{1}{a^3}$
7. $(23n)^0$ 1	8. $(6d^8)^2 \cdot 6^2 \cdot (d^8)^2$ $36d^{16}$	9. $\frac{54n^8}{9n^2}$ $6n^6$
10. $(-2x^{11})^2$ $(-2)^2 \cdot (x^{11})^2$ $4x^{22}$	11. $\frac{8s^3 \cdot 8s^9}{16s^3}$ $\frac{64s^{12}}{16s^3} = 4s^9$	12. $(3m^3n^8)^3$ $3^3 \cdot (m^3)^3 \cdot (n^8)^3$ $27m^9n^{24}$
13. $\frac{m^4n^3}{m^4n^3p^5}$ $\frac{1}{p^5}$	14. $-10m^{-8} \cdot 6m^{12}$ $-60m^4$	15. $(-9m^3n^7)^2$ $-9^2 \cdot (m^3)^2 \cdot (n^7)^2$ $81m^6n^{14}$

Write each expression using a **positive** exponent.

16. 3^{-5} $\frac{1}{3^5}$	17. m^{-6} $\frac{1}{m^6}$
18. c^{-11} $\frac{1}{c^{11}}$	19. 7^{-3} $\frac{1}{7^3}$

Over...there's more.

What would x have to be to make the statement true?

20. $p^2 \cdot p^x = p^{13}$ $2 + \square = 13$ <u>11</u>	21. $\frac{k^{16}}{k^x} = k^{11}$ $16 - \square = 11$ <u>5</u>
22. $(6^3)^x = 6^{36}$ $3 \cdot \square = 36$ <u>12</u>	23. $p^x \cdot p^{-7} = p^3$ $\square + (-7) = 3$ <u>10</u>

Write each fraction as an expression using a **negative** exponent other than -1 .

24. $\frac{1}{n^9}$ n^{-9}	25. $\frac{1}{2^{10}}$ 2^{-10}
26. $\frac{1}{13^4}$ 13^{-4}	27. $\frac{1}{f^5}$ f^{-5}