

Name _____

Date ANSWER KEY

Properties of Exponents Practice

Simplify each expression using the properties of exponents. Write the answer as a single term with a positive exponent.

$4^6 \cdot 4^3 = \underline{4^9}$	$3^{-2} = \underline{\frac{1}{3^2}}$	$\frac{6^{14}}{6^{12}} = \underline{6^2}$	$(5^3)^5 = \underline{5^{15}}$
$2^{-8} = \underline{\frac{1}{2^8}}$	$\frac{12^9}{12^5} = \underline{12^4}$	$8^3 \cdot 8^2 = \underline{8^5}$	$(17^4)^6 = \underline{17^{24}}$
$(13^2)^{11} = \underline{13^{22}}$	$3^7 \cdot 3^8 = \underline{3^{15}}$	$14^{-15} = \underline{\frac{1}{14^{15}}}$	$\frac{9^{23}}{9^{16}} = \underline{9^7}$
$7^9 \cdot 7^{12} = \underline{7^{21}}$	$(4^6)^5 = \underline{4^{30}}$	$\frac{10^{25}}{10^{18}} = \underline{10^7}$	$48^{-6} = \underline{\frac{1}{48^6}}$
$\frac{2^{31}}{2^{17}} = \underline{2^{14}}$	$18^{-13} = \underline{\frac{1}{18^{13}}}$	$(6^{12})^7 = \underline{6^{84}}$	$5^{14} \cdot 5^{18} = \underline{5^{32}}$

Challenge! Simplify each expression using the properties of exponents. Write the answer as a single term with a positive exponent.

$\frac{9^1}{9^4} = \underline{\frac{1}{9^3}}$	$\frac{25^5}{25^3} \cdot 25^6 = \underline{25^8}$	$\frac{(7^3)^4}{7^5} = \underline{7^7}$
$(4^{-3})^2 = \underline{\frac{1}{4^6}}$	$5^8 \cdot (5^5)^2 = \underline{5^{18}}$	$\frac{6^{12} \cdot 6^{15}}{6^4} = \underline{6^{23}}$