

Name: _____

Date: _____

Assignment

Simplify the following expressions to a single power, where possible. Do not evaluate. Show all your work.

a. $3^4 \times 3^5$

b. $5^6 \times 7^3$

c. $\frac{972^{10}}{972^8}$

d. $\frac{64}{4^2}$

e. $\frac{4^3}{5^7}$

f. $3^7 \times 9^2$

g. $\frac{8^5}{8}$

h. $\frac{5^3}{25}$

i. $\left(\frac{13^5}{13^2}\right)^7$

j. $(12^4)^{16}$

k. $\frac{4^3}{2^3}$

l. $((15^3)^3)^2$

m. $y^{64} \times y^{42}$

n. $a^9 \times b^4$

o. $\frac{q^{78}}{q^{42}}$

p. $\frac{a^{23}}{b^{17}}$

q. $p^{90} \times q^{12}$

r. $(x^{13})^4$

s. $\frac{z^8}{z}$

t. $\frac{c^{27}}{c^{12}}$

u. $\left(\frac{d^9}{d^3}\right)^4$

v. $\left(\frac{m^{90}}{m^{80}}\right)^4$

w. $((f^2)^2)^2$

x. $\frac{1}{(k^4)^3}$