Mastery Algebra 1 **Chapter 7 Review 1** Name KEY

1. Simplify, leaving your answer in exponent form with only positive exponents. Show work.

a) $c^{-2} \cdot c^9$ Answer: c^7

c^{-2+9}

b) w^{-6} Answer: $\frac{1}{w^6}$

c) $(x^{10}y^4)^0$ Answer: 1

d) $\frac{a^4}{a^{12}}$ Answer: $\frac{1}{a^8}$

$a^{4-12} = a^{-8}$

e) $(w^{-3})^{-5}$ Answer: w^{15}

$w^{-3(-5)}$

f) $\frac{12x^{-2}y}{15x^4y^{-3}}$ Answer: $\frac{4y^4}{5x^6}$

$\frac{4}{5}x^{-6}y^4$

g) $(5x^4)^2$ Answer: $25x^8$

h) $-3a^9 \cdot 7a$ Answer: $-21a^{10}$

i) $(4x^{-7})^3 \cdot (x^8)^2$ Answer: $\frac{64}{x^5}$

$64x^{-21} \cdot x^{16}$

$= 64x^{-5}$

j) $\frac{c^6 \cdot (c^5)^{-3}}{c}$ Answer: $\frac{1}{c^{10}}$

$\frac{c^6 \cdot c^{-15}}{c^1} = \frac{c^{-9}}{c^1} = c^{-10}$

k) $\left(\frac{4x^8}{3y}\right)^2$ Answer: $\frac{16x^{16}}{9y^2}$

$\frac{16x^{16}}{9y^2}$

2. Fill in the blanks for each problem.

a) $\sqrt[3]{216} =$ 6 because 6 · 6 · 6 = 216

b) $\sqrt{81} =$ 9 because 9 · 9 = 81

c) $2 = \sqrt[3]{8}$

d) $\sqrt[9]{56} = 56^{\frac{1}{9}}$ (fraction exponent)

3. Evaluate. Show your work. Answers only will not get any credit. (Yes, these are fractional exponents.)

a) $144^{\frac{1}{2}} = \sqrt{144}$ Answer: 12

b) $16^{\frac{3}{4}} = \left(\sqrt[4]{16}\right)^3$ Answer: 8

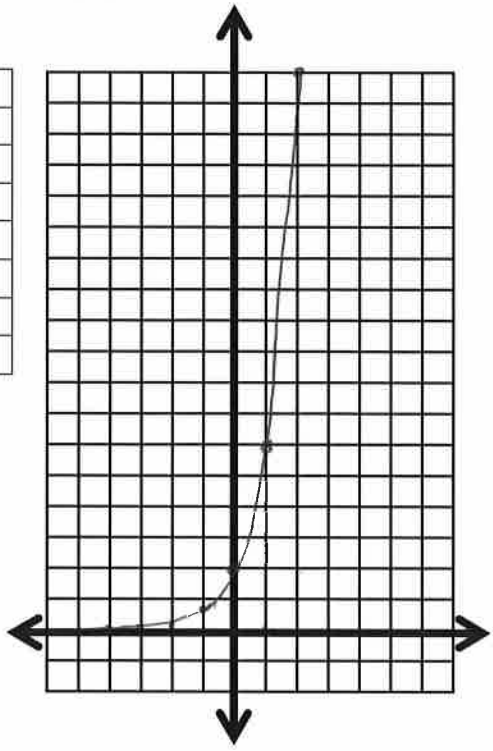
$= 2^3$

c) $27^{\frac{2}{3}} = \left(\sqrt[3]{27}\right)^2$ Answer: 9

3^2

4. Using a chart, graph $y = 2 \cdot 3^x$

x	y
2	18
1	6
0	2
-1	$\frac{2}{3}$
-2	$\frac{2}{9}$
-3	$\frac{2}{27}$
-4	$\frac{2}{81}$



The scale is 1…do <u>NOT</u> change the scale!