

## Chapter 7 Extra Practice Worksheet

Name: \_\_\_\_\_

Simplify each expression. Use only positive exponents. Show your work!!

1.  $a^6 b^{-4} c^0$

2.  $x^9 \cdot x^{-12}$

3.  $(2g)^{-5}$

4.  $(x^{-6})^{-5}$

5.  $\frac{1}{c^5} \cdot c^{10}$

6.  $(h^4)^8$

7.  $\frac{r^{12}}{r^3}$

8.  $\frac{9a^7 b^3}{3a^4 b^6}$

9.  $\frac{p^3 q^8}{q^8 r^{-3}}$

10.  $(m^6 n^{-4} m^{-2})^{-5}$

11.  $\left(\frac{x^7 y^{-4}}{x^{-6} y^7}\right)^{-1}$

12.  $u^{-4} v^{\frac{1}{3}} (u^5 v^{-2})^{\frac{1}{3}}$

13.  $\frac{5m^3}{2m^{-6}} \cdot \frac{4n^7}{(mn)^4}$

14.  $\frac{(5a^3)^3}{5a^4}$

15.  $\frac{3x^3 y^6}{9xy^7} \cdot \frac{2x^2 y}{4x^3 y^0}$

16.  $\frac{6x^{-4} y^{-1}}{4x^{-3} y} \cdot \frac{12x^{-7} y^{-3}}{3y^{-8}}$

17. Use the equation  $y = 300 \cdot 1.1^x$  to answer the questions.

- a. Does the equation represent exponential growth or decay?
- b. What is the initial amount?
- c. What is the growth/decay factor?

18. A population of 500 mice increases at an annual rate of 2.5%. How many mice will there be in 10 years? Show your work!!

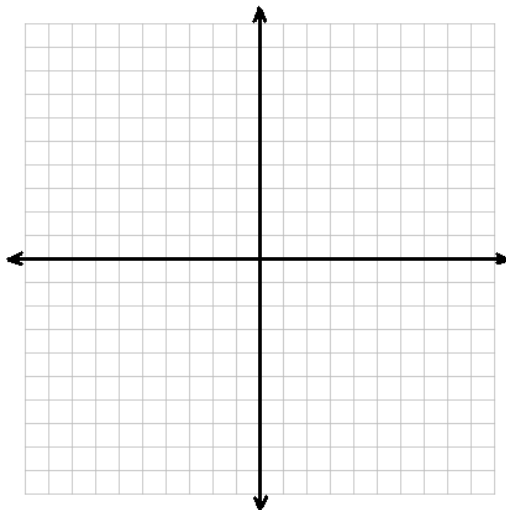
19. Suppose you deposit \$6,000 in a savings account that pays 3.6% interest compounded monthly.

- a. Write an exponential function to model the amount of money you have in your savings account after  $x$  years.
- b. How much will you have in your account after 7 years? Show your work!!

**Complete the table, then graph the function.**

20.  $f(x) = 4^x$

$x$	$f(x)$
-2	
-1	
0	
1	
2	



21.  $f(x) = \left(\frac{1}{2}\right)^x$

$x$	$f(x)$
-2	
-1	
0	
1	
2	

